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ABSTRACT

This teacher's guide, consisting of a series of 12 lesson plans for use in teaching 20 self-paced learning modules, deals with industrial sewing. Covered in the individual lesson plans are the following topics: an orientation to industrial sewing; the history of industrial sewing; safety and hygiene in the laboratory and in the factory; machine parts; the analytic method of training; needle specifications; garment manufacturing and layout (darts, seams, collars, cuffs, sleeves, zippers, pockets, serger or overlock machines, blindstitch machines, button sew machines, buttonhole machines, zig zag machines, knife machines, bar tack machines, double-needle felling machines, and chainstitch machines); finishing and pressing processes (special attachments and operations); field trips; and job interviews. Each lesson plan includes an objective, a criterion-referenced measure, a list of tools and materials, a list of other resources, suggested instructor actions, and information sheets. Also included in the guide are a list of references, a modules answer key, a glossary of terms, and a series of transparencies. (MN)

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INDUSTRIAL SEWING CLASSROOM DELIVERY SYSTEM

TEACHER'S GUIDE

CE036656

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The developmental stages of the Industrial Sewing Classroom Delivery System were initiated in 1979 by Dr. Betty Watkins, Curriculum Specialist at Clemson University. She enlisted the aid of four classroom teachers and began the process of gathering and writing information. The four teachers were Winnell Frazier, Greenwood Area Vocational Center; Millie Gandy, Marlboro Area Vocational Center; Catherine Lee, H. B. Swofford Vocational Center; and Miriam Seay, R. D. Anderson Area Vocational Center. These teachers remained with the project even after the responsibility was transferred to the State Office of Vocational Education in Columbia and assigned to Margaret Gregory, Curriculum Designer in the Vocational Curriculum Development Section.

The State Office greatly appreciates the pioneer efforts which began this project. Dr. Watkins and the four teachers involved gave untiringly to the project and demonstrated their continued committment to establishing instructional materials for industrial sewing in the high schools.

During the three years of development in which Shirley Crook served as State Supervisor in the Trades and Industrial Education area, she assisted as a resource person on the project. After completion of the project, the field test was conducted by the Vocational Research Coordinating Unit of the South Carolina Office of Vocational Education with Amelia Todd supervising the testing, compilation and interpretation of the results.

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INTRODUCTION

Industrial sewing in the vocational education programs in South Carolina is a one-year course and is offered in the vocational centers or high schools for students interested in pursuing a career in the sewing industry. The course is taught by former industrial sewing operators and supervisors who have demonstrated expertise in the trade. A great deal of the instructional materials used in the past was developed by these teachers based on their experiences and with assistance from the sewing machine distributors and the South Carolina Needle Trade Association.

Due to the lack of available textbooks, the State Office of Vocational Education contracted with industrial sewing teachers to develop and to field test appropriate materials. The Teacher's Guide contains lesson plans, transparency masters, and information sheets. The self-paced modules which are listed in the Scope and Sequence are separate booklets for individualizing instruction. The Scope and Sequence of the course is designed to provide the teacher with a consistent and continuous flow of concepts and activities. However, the lesson plans and modules may be rearranged for adaptation to the needs of the class. For example, the serger (overlock) machine and the blindstitch machine may be introduced in first semester if local industry uses only these machines. Also, the Glossary of Terms is intended for use throughout the school year.

The single needle lockstitch machine is introduced first because it is used most often in the garment industry. Lesson plans and student modules dealing with the operation of a single needle lockstitch machine are covered in the first semester work. Second semester is concerned with the other machines found in the sewing plants located in the community. However, all these machines are not found in each vocational center or high school. The classroom teacher may use those modules dealing with unavailable machines as informational packets to make the students aware of the machine and its uses.

Not all machines and attachments are addressed in these instructional materials. It would be an impossibility to include everything since the individual industry sometimes develops or alters an attachment to save time and motion on an operation.

Industrial sewing is a repetitious form of work. The student should understand that he/she may spend a long period of time performing the same operation. Production is important because the better and faster an operator can perform, the more money he/she will make. During the school year, the instructor may conduct timed activities and relate that performance to minimum standards accepted in industry. The module on mathematics will help in the instruction of performance in relation to pay.

The industrial sewing instructor is allowed the freedom to permit the students to progress at their own speed. The modules are designed to enhance the teacher demonstration and instruction on any of the procedures. These modules will also permit the student to progress faster than the class or repeat procedures for perfection.

The purpose of the industrial sewing course, utilizing lesson plans and student modules, is to prepare the student for entry-level jobs and to develop an awareness of the industrial sewing industry. This awareness and preparation should produce a better and more productive worker.

Field Test Abstract

During the 1981-82 school year, a field test of a set of curriculum materials developed for use in industrial sewing classes was conducted. The purpose of the study was to determine the usability, accuracy, and effectiveness of the set of materials and to gather recommendations as to the types of revisions required for improvement.

Options as to the usability and accuracy of the materials and revision recommendations were gathered from a review committee made up of members of the South Carolina Needles Trade Association and from eleven classroom teachers who used the materials for instruction during the project year. On the basis of this review procedure, final revisions in the materials were planned. In addition, a control group design was used to gather evidence as to the effectiveness of the new materials for classroom instruction, as compared to instructional materials currently in use. An achievement measure for each of the two semesters was constructed and administered on a pre/post test basis to students in the eleven implementing (experimental group) classes and in eleven control group classes. Mean scores were calculated for each group and the significance of the difference between the scores in the two groups was examined by means of a t-test procedure.

Results

Analysis of the achievement data revealed that students in the classes which used the new curriculum materials scored significantly higher on the post test in each semester. The t-test procedure indicated that the differences in the mean scores on both the first and second semester achievement measures were significant at the .05 level.

The results indicate that the industrial sewing curriculum materials are an effective tool for classroom instruction. Distribution of these materials should provide a useful resource for teachers of industrial sewing in the state.

A composite of field test questions is available upon request from the Vocational Curriculum Development Section, 1237 Gadsden Street, Columbia, SC 29201. These test questions may be used as a total package or individual questions may be utilized as a teaching tool in the classroom.

INDUSTRIAL SEWING

Scope and Sequence

Duty (in teaching sequence)	Task/Supplemental Objectives (in sequential order)	Delivery Mode
Orientation to Industrial Sewing	Introduction Job opportunities Jobs available Projected job openings Employees in industrial sewing factories Classroom orientation	Lesson Plan 1 Group Mode
History of Industrial Sewing	Industrial sewing prior to invention of commercial machines Commercial machines First machines (kinds and inventors) Difference in home machine and industrial sewing machines Rewarding careers (productive occupations and competition)	Lesson Plan 2 Group Mode
Safety and Hygiene in Laboratory and Factory	Keep work area clean Housekeeping duties Develop an attitude of safety Obey all safety rules Develop safety approach and be consistent	Lesson Plan 3 Group Mode
Machine Parts	Identify machine parts and their functions	Lesson Plan 4 Group Mode
Operate Single Needle Lockstitch Machine	Identifying parts and purpose Threading the machine Removing the bobbin case Winding the bobbin Replacing a wound bobbin Operating the lockstitch machine Tying on thread Measuring with gauge and ruler	Self-Paced Module 1
Analytic Method of Training	Skill analysis Movements and method Posture Steps in learning job Attitudes Stop watch	Lesson Plan 5 Group Mode

Mathematics	Needle trades	Self-Paced Module 2
Needle Specifications	History of needle Identify needle parts Steps in changing needles Needle specifications	Lesson Plan 6 Group Mode
Proper Care of Machine	Clean industrial sewing machine Lubricate industrial sewing machine	Lesson Plan 7 Group Mode
Quality Construction Specifications	Seams Topstitching Backstitching Production	Lesson Plan 8 Group Mode
Garment Manufacturing (Garment Layout)	Component parts together Top of garment together Bottom of garment together One-piece garments (consistent) Parts following in seuence	Lesson Plan 9 Group Mode
Darts	Construct, sew and press darts Constructing straight/shaped darts Constructing double-pointed darts	Self-Paced Module 3
Seams	Construct and sew seams Sewing straight seams Sewing French seams Sewing flat-felled seams	Self-Paced Module 4
Collars	Construct and sew collars Setting a circle collar Setting a sandwich collar Making (or running) collars	Self-Paced Module 5
Cuffs	Construct and set cuffs Making and setting all types of cuffs Making and setting French/ placket cuffs Making and setting bound sleeve cuffs	Self-Paced Module 6
Sleeves	Construct and set sleeve Constructing and setting sleeve with fullness Constructing and setting sleeve without fullness	Self-Paced Module 7

Zippers	Set zipper Setting kissing and separating zippers Setting lapped zipper Setting cut-in zipper Setting invisible zipper Setting fly zipper	Self-Paced Module 8
Pockets	Construct and set pockets Constructing and setting patch pockets Constructing and setting onseam (side-seam) pockets Constructing and setting welted pockets	Self-Paced Module 9

Not all vocational schools will have the following machines. In this case the teacher will want to concentrate on the modules which apply to available machines and use the other modules for group instruction.

Serger (Overlock)	Special operations Purpose and serging edge of cloth Serging a seam Setting a blouse/shirt cuff Setting a tailored cuff Setting sleeves Making a tie belt Setting elastic Hemming sleeves Setting ruffles	Self-Paced Module 10
Blindstitch	Special operations Purpose and threading the machine Skip stitching Folding	Self-Paced Module 11
Button Sew	Special operations Sewing on all types of buttons	Self-Paced Module 12
Buttonhole	Special operations Parts and purpose Gauged buttonhole	Self-Paced Module 13
Zig Zag	Special operations	Self-Paced Module 14
Knife	Special operations	Self-Paced Module 15

Bar Tack	Special operations	Self-Paced Module 16
Double-Needle Felling	Special operations Straight flat-felled seams Curved flat-felled seams	Self-Paced Module 17
Chainstitch	Special operations	Self-Paced Module 18
Finishing and Pressing Process	Trim, turn, and inspect garment	Lesson Plan 10 Group Mode
Special Attachments	Primary sewing operations to use attachments Gauges Zipper foot Cording attachment Hemming, shirring, and binding	Self-Paced Module 19
Special Operations	Topstitching and mitering Topstitching square corners Mitering a v-neck shirt	Self-Paced Module 20
Field Trips	Procedures before and after trip	Lesson Plan 11 Group Mode
Job Interview	Procedures for applying for employment	Lesson Plan 12 Group Mode

INDUSTRIAL SEWING LESSON PLAN I

Orientation to Industrial Sewing

Objective

Given reference materials and classroom discussion, respond to a quiz on job opportunities, responsibilities, advantages and disadvantages as an employee in an industrial sewing plant.

Criterion-Referenced Measure

Your instructor will provide you with a multiple choice quiz. Record your answers on a separate sheet of paper with 85 percent accuracy. Return your answers and the quiz to the instructor.

Tools and Materials

Overhead projector, chalkboard, chalk

Other Resources

Information Sheets 1.1, 1.2, 1.3
Transparencies T1.1, T1.2, T1.3, T1.4
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Conduct get acquainted session for students. a. Write name on board and introduce self to class. b. Have students fill out personal information form. c. Call roll from forms filled out by students. d. Discuss class rules, discipline, credit attendance, fees, and materials required for course. e. Conduct tour of department.	1. Chalkboard and chalk Information Sheet 1.1 Completed Information Sheet 1.1
2. Introduce industrial sewing as a profession. a. State objectives of course. b. Differentiate between home and industrial sewing.	2. Information Sheet 1.2 Transparency T1.1 **Films** "A Look At Our Industry." Union Special Corporation, Technical Training, 12005 4th Street, Huntley, IL 60142. 15 minute color film. Preview for 3 days, postage and handling fees only. Purchase for $75.

"The Woven Image." Artistic Identification Systems, Inc., 55 Wanaque Avenue, Richmond, VA 23227. Color film. Rent for $10 for two weeks.

"The World's Still Young." Honig, Cooper and Harrington, P. O. Box 3181, San Francisco, CA 94119. 15 minute color film. $70 to purchase.

3. Conduct discussion session on these topics.
   a. Job opportunities
   b. Advantages of industrial sewing

3. Transparency T1.2, T1.3, T1.4

4. Have students work in small groups.
   a. Locate industrial jobs in local newspaper.
   b. For each job identified, try to answer questions about jobs.
   c. Have each group report findings to class.

4. Local newspapers - help wanted sections
   Information Sheet 1.3

5. Check out student performance by having students complete teacher-developed quiz covering these components.
   a. Job opportunities
   b. Job responsibilities
   c. Job advantages
   d. Job disadvantages

5. Quiz

INDUSTRIAL SEWING

Information Sheet I.1
Personal Data

Name_____ Age_____

Address_____

Telephone Number_____

Parent's Name_____

Parent's Occupation:

Father_____

Mother_____

Your Hobbies_____

Handicaps (such as wearing glasses)_____

Why are you taking this course?_____

What do you expect to get out of this course?_____

INDUSTRIAL SEWING

Information Sheet 1.2

Introduction to Sewing

The sewing industry is among the largest manufacturing industries in the United States today. Clothing heads the list followed by household linens and accessories, home furnishings, sporting goods, toys, travel accessories, uniforms, automobile accessories and even space suits. These items reveal the wide expanse of the sewing industry and the large number of employment possibilities.

The employment outlook indicates that many thousands of new workers will be needed to replace those who leave to marry, raise families or pursue other careers. Eighty per cent of the employees in this industry are women.

Most of the employment opportunities in the sewing industry will be for operators to use fast power-driven sewing machines. These machines are heavier than the home sewing machine and are capable of a greater rate of speed. For example, the home machine sews approximately 900 to 1500 stitches per minute as compared to 3500 to 7000 stitches per minute for industrial machines. Wherever commercial sewing is done (manufacturing plants, alteration workrooms, tailor or dressmaking shops, slipcover and drapery workrooms, clothing maintenance shops) industrial machines are used.

Thoroughly trained beginners can find employment in this field even though they have no job experience. Specific duties vary within each branch of the industry, but a person who can skillfully operate a lockstitch machine can easily learn to perform the construction techniques required by a particular manufacturer.

Industrial sewing is a rewarding, productive vocation. Demonstrated performance can lead to positions of responsibility and advancement. Many sewing operators have moved into management positions by exhibiting a desire to work and being productive workers. These employment opportunities offer greater job security, financial rewards, and prestige.

INDUSTRIAL SEWING

Information Sheet I.3

Job Questionnaire

Search the want ads section of the paper. Select one or more industrial sewing jobs advertised. Discuss in a small group the following points:

Type of job_____

Opportunities to learn new skills_____

Advancement opportunities_____

Major duties_____

Knowledge, skills, and abilities required_____

Personal qualities, education_____

Health requirements of the worker_____

Salary range_____

Working conditions_____

Fringe benefits_____

INDUSTRIAL SEWING LESSON PLAN 2

History of Industrial Sewing

Objective

Given reference materials and classroom discussion, respond to a quiz on the history, growth, and present opportunities in industrial sewing.

Criterion-Referenced Measure

Your instructor will provide you with a multiple choice quiz. Record your answers on a separate sheet of paper with 85 percent accuracy. Return your answers and the quiz to the instructor.

Tools and Materials

Overhead projector, 16mm projector, filmstrip projector, filmstrip

Other Resources

Information Sheets 2.1, 2.2
Transparencies T2.1 through T2.14
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Prepare students to view film or filmstrip which covers these topics. a. Industrial sewing prior to invention of sewing machine b. Invention of sewing machine by Elias Howe c. Early types of sewing machines and their use in factories	1. **Film** "The Story of Elias Howe." May be rented from Indiana University Audio-Visual Center, Bloomington, IN 47405 (817-337-8087) or "Industrial Sewing Vocational Career Exploration." Office of Vocational Education, State Department of Education, Columbia, SC 29201.
2. Show film and conduct follow-up discussion.	
3. Demonstrate the difference between the home sewing machine and a commercial machine.	3. Information Sheet 2.1
4. Conduct a discussion on "Fashion as an Art." Point out rewarding careers, production occupations, and competition.	4. Information Sheet 2.2 Transparencies T2.1 through T2.14 **American Vignettes: A Collection of Footnotes to History**, pp. 160-164

	Stories Behind Everyday Things Buttons - pp. 53-54 Cloth - pp. 73-74 Fads - pp. 138-139 Footwear - pp. 144-146 Gloves - p. 156 Jacket - pp. 194-195 Jeans - pp. 195-196 Neckties - pp. 227-229 Safety Pin, Pin and Needle - p. 290 Scissors - pp. 297-298 Sewing Machine - pp. 299-301 Paper Patterns - p. 301 Shirt - pp. 304-305 Thread - p. 366 Towel - p. 375 Underwear - pp. 383-384 Zipper - p. 400
5. Have students complete teacher-developed quiz.	5. Quiz

INDUSTRIAL SEWING

Information Sheet 2.1

Differences Between Home Sewing Machine and Industrial Sewing Machine

1. Obtain portable home sewing machine and thread it prior to class. Thread a single needle lockstitch machine. Cut fabric strips of the same length.

2. Seam the pieces of fabric on each of the machines while one or more students time you with a stop watch.

3. Show the brake, knee lift, and self-oiling features of the commercial machine which are not on the home machine.

4. Discuss the difference in the price of the two machines. Show features which account for the price difference.

INDUSTRIAL SEWING

Information Sheet 2.2

Fashions as an Art

Current fashion trends, problems of sewing fashion, and how to prepare the student should be brought out with the use of the following transparencies. As the instructor, you are to draw from this information for your lectures.

T2.1
Fashion - This is one of the most fascinating words in any language. Its implications are far reaching. Since the beginning of man's existence, fashion has been significant in his life. It had a meaning to primitive man when he brought home pelts to shelter his family against the elements. Down through the march of the centuries it has grown increasingly meaningful.

The public, in general, is prone to view clothes in terms of dollars and cents, of necklines and waistlines, rounded bosoms and flat hips, and hems that cover or reveal the knees. Little does the average person know of the fabulous background of fashion, of the romance and history that is interwoven with much of the inspiration that influences designs and gives form to the silhouettes of dresses.

You might ask exactly what is fashion?

It is the everyday reflection of the lives we lead and the way we live them. Fashion is like a mirror that reflects the feeling, the pace, the activities, and most of all the needs of our daily lives. The business of fashion is the business of the events, activities and living patterns of the particular era we live in.

What is the history of this fabulous world of fashions?

T2.2
A little more than a century ago it was one of the homemaker's tasks to turn out the family's wearing apparel. Only the wealthy could afford the expense of having someone else make their garments.

T2.3
Today, America's clothing industry is mass producing and leads the world in quantity, quality, and variety of all types of ready to wear apparel for everyone. Its development is a relatively new one in the industrial history of the United States. Today, however, it is the eighth most important manufacturing classification in the United States and its current output is measured in billions.

T-2.4
The clothiers of colonial America operated under the "sell then make" system. By 1790 they were carrying stocks of ready made garments produced on speculation during dull periods; this instituted the "make then sell" system. These clothiers eventually became what is known today as manufacturing retailers or the beginning of the fashion industry of America.

T2.5
The fashion industry is a well-organized business which caters to people at every economic level and in every social station. It functions with definite sources of origin and channels of distribution.

The clothing industry in America has come a long way from a century ago. With its ultra-modern factories and scientific developments it is truly the most colorful and exciting field of industrial production in the world.

And exactly what does all this talk about fashion, scientific developments, and ultra-modern factories have to do with you?

You are the students' first contact with this world of producing fashion.

Do you introduce the students to this excitement - OR do you deglamorize it by saying "this is how you sew"?

T2.6
The creation of fashion does not end with the artist's pen. It follows the entire cycle of the garment with the main ingredient being that of the sewing artist.

T2.7
Not everyone has the talent to become a good sewing operator.

The art of designing fashion is the art of creating the initial idea.

The art of sewing fashion involves dexterity of movement and technical knowledge of the equipment needed to produce the array of today's fashions.

Introduce the student to the possibility of inferior fashion that can take place through improper machine setting, use of needles, carelessness, etc.

Does the graduate know what a ball point needle is and its use?

Does the student know what function the scarf of the needle performs?

Can he/she name the parts of a needle?

Is he/she thoroughly acquainted with the needle bar? feed dog? throat plate?

Can the student recognize a malformed stitch?

Does he/she thoroughly understand the tension assembly system?

Does the student understand the difference between the rotary hook system used to form a lockstitch as compared to the looper system used to form the chainstitch?

Does the student know what parts of the garment are sewn with the lockstitch and what parts with the chainstitch?

All of this information should be brought to the attention of the student. These are the technical functions which must be performed and understood to guarantee the production of a fashionable product.

Also the methods, handling, and actual running of the machine are key functions to be taught.

T2.8
Sewing a quality fashion product involves far more than just pressing down on the treadle of a machine.

Fashion trends change so rapidly that without a basic understanding of what his/her machine can create, the sewing operator will not be able to adjust to the many changes which will occur in the industry.

Look at the knit shirt for example. The basic fashion began with the crew neck and then became the turtle neck. From here it became the boat neck, and finally the collar neck.

T2.9
As you can see from these examples, operators were trained to sew the crew neck. As they became confident and skilled in this operation, however, the fashion changed and we had to teach them to sew the turtle neck.

T2.10
Once they had mastered this, the fashion trend again changed to the boat neck.

T2.11
When they were proficient at this, there was still another change to the collar neck.

T2.12
As you can see from dealing with the collar of a basic item such as a knit shirt, fashion trends can create both training and adjustment problems for the sewing operator.

T2.13
Look at the basic blue jean. The blue jean has always been a part of a young child's wardrobe. But as seen in these examples, the blue jean is no longer nearly as basic.

Given the basic jean, the public then wanted fancy pockets and fancy stitchings. All of these fashion changes required adjustments by the sewing industry.

Five years ago approximately 600 styles a year were shown to the buyers. This past year, over 2300 styles were shown. This is an indicator of the diversity in fashion today.

Not only does the silhouette of the fashion change but also the fabrics. This change in fabrics presents unique problems to the sewing industry.

T2.14
Take the basic shirt with a collar neck and a button front. In the past, this particular silhouette was available in only cotton fabrics. Then came the cotton polyester era, perma press, and as this sample shows you, we are now into the acetate or silky look.

Each of these fabrics created handling and sewing problems to the operator. Each fabric acts differently when handled and when addressed to the needle and the operator must be trained to adjust to these changes.

The business of fashion is the business of making goods best suited to our times, our lives, and our needs. In order to survive, the fashion industry must cater to people at every economic level and in every social station.

It is the responsibility of the industrial sewing instructors to show the student the important role he/she plays in fulfilling this need of society.

The sewing industry, since it caters to the fashion world, is an emotional industry.

Each operator has an input into the value of the product. The students should be made to feel their involvement in the work they are producing.

Helping the student understand the world of the apparel industry can be done through introducing the student to the many facets of the industry. Train the student in the techniques of making a quality garment!

The student can be provided with reading materials from this list.

-The Needle's Eye
-The Daily News Record
-The Women's Wear Daily
-The Clothiers of America
-The Bobbin
-The Southern Apparel Industry Magazine

The teacher should visit a sewing plant at least twice a year to keep abreast of what items are currently being produced and the latest equipment being used.

Most importantly, the teacher should remove the existing connotation of the sewing machine operator as the least appealing and least skilled of industrial employment.

Being in the business of fashion is exciting. Where else can the worker actually produce the current trend?

Where else does the individual person's skill play the key role in the production of the product?

It is a demanding occupation, but a very rewarding one.

The industrial sewing operator should be proud of involvement in the field of the apparel industry. You, as an instructor, should be proud of their accomplishments and contributions to the varied sewing plants.

Keep your goals set high and make your classes the most exciting and rewarding of all the courses offered in your schools. As the instructor feels pride in having had the industrial sewing experience, so will the students who look to him/her for guidance, direction, and training.

INDUSTRIAL SEWING LESSON PLAN 3

Safety and Hygiene in Laboratory and Industry

Objective

Given a brush and broom, clean the work area floor around a machine. No lint, dust or other debris should be visible in the work area. Given reference materials and class discussion, respond to a quiz on rules of safety and hygiene in the laboratory and industrial sewing plant.

Criterion-Referenced Measure

Clean the work area floor around a sewing machine as directed. Your instructor will provide you with a quiz. Respond to quiz with no less than 85% accuracy.

Tools and Materials

Other Resources

Information Sheets 3.1, 3.2, 3.3
Transparencies T3.1 through T3.26
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Conduct group discussion on personal hygiene and cleanliness.	1. Transparencies T3.1 through T3.4
2. Demonstrate good housekeeping procedures. Using Information Sheet 3.1 as guide, clean work area floor.	2. Information Sheet 3.1
3. Conduct a discussion on safety rules. Use Information Sheets 3.2 and 3.3	3. Transparencies T3.5 through T3.20 Information Sheets 3.2 and 3.3
4. Conduct a discussion on developing a positive, mature attitude toward work.	4. Transparencies T3.21 through T3.26
5. Have student complete teacher-developed quiz and rules for safety and hygiene in the laboratory and on the job.	5. Quiz
6. As students feel they are ready to demonstrate their skill, check out their performance and clean work area floor.	

INDUSTRIAL SEWING

Information Sheet 3.1

Procedure for Cleaning Work Area Floor

Tools and supplies: brush, broom

1. Turn off machine power.
2. Place operator's chair on work bin.
3. Brush machine underframe, motor, and treadle.
4. Remove all work from bins.
5. Brush all dirt, lint, or threads from bins onto floor.
6. Return production work to bins.
7. Sweep lint and debris (thread, paper, material scraps, etc.) from under machine treadle, machine bed, and work bins into aisle or predesignated location.
8. Replace brush and broom.

INDUSTRIAL SEWING

Information Sheet 3.2

Safety

The importance of safety on the job cannot be overemphasized. Accident prevention is the responsibility of every machine operator. Efficient safe workers take no chances; they know that to do so may result in personal injury, lost time, and decreased earnings. Following safe working procedures results in personal security, increased production, and higher earnings. Employers prefer safe, efficient workers who protect themselves and others from injury and the property and equipment they use from danger. Learn safety rules and regulations and always comply with them. Develop good work habits and be safety conscious at all times.

Dress for the job. Wear comfortable, neat, suitable clothing. Fussy clothing is not only out of place but also can be dangerous. Avoid wearing anything that may get caught in the machinery. Scarfs, loose or bulky sweaters, ties, ruffles or frills, loose fitting smocks, large buttons, and long hair are all dangerous to your safety around moving machinery. Jewelry is also out of place in the workroom. Jewelry may get caught in machinery and cause a serious accident. Simple, tailored clothing is both appropriate and safe.

INDUSTRIAL SEWING

Information Sheet 3.3

Safety Precautions in the Sewing Industry

1. Good posture is the keynote to good health. It lessens fatigue, and thus reduces accidents and injuries.
2. Poor vision should be corrected immediately. Wear only those glasses that have been prescribed for you.
3. Always wear your jacket or smock in your trade room.
4. Never bite threads as it causes nicks in your teeth.
5. Report all accidents immediately, no matter how slight they may seem.
6. Aisles should be clear at all times and the chairs kept close to the tables.
7. Know the safety rules and practice them.
8. Do not carry scissors in your pockets. Avoid placing them in your lap while working.
9. Always keep the blades of the scissors closed when not in use.
10. Keep your scissors on the right side of the machine.
11. Hand scissors to another person by holding the closed blades in your hands.
12. Know the location of the main switch and the emergency switches and how to operate them in an emergency.
13. Use the power machine only when there is an instructor present in the room.
14. Use only the machines in which you have received instructions in control and threading.
15. Sit erect with your chair close to the table when operating a machine.
16. Do not tilt your chair forward or backward.
17. Do not put your face too close to the machine.
18. Keep your fingers at a safe distance from the needle while operating the machine. The machine should be equipped with a needle guard.
19. To avoid accidents, do not wear flowing sashes, bows, and ties or excessive jewelry.
20. Wear comfortable shoes for proper control of the machine. Avoid high heels or boots.
21. Always work in the proper light. Avoid any glare, particularly at the machine.
22. Always pay strict attention to your work and to your own machine.
23. Notify the instructor if there are any machine parts missing, loose, or broken, particularly the needle guard.
24. Do not remove any safety devices from a machine.
25. Turn off the power and release the upper belt from the balance wheel before cleaning or oiling the machine.
26. Do not make any adjustments on the machine unless instruction has been received.
27. While using a screwdriver, do not let it slip out of the screw slot.
28. Regulate all control of the machine by pressure on the treadle and never place your hand on the balance wheel to stop it.
29. If the machine does not work properly or if it makes an unusual noise, notify the instructor at once.
30. Be sure the needle, needle guard, and bobbin case are properly set before starting the machine.

2. Have students complete teacher-developed quiz.	2. Quiz (Sheets 4.2 and 4.3)

INDUSTRIAL SEWING LESSON PLAN 4

Machine Parts

Objective

Given reference materials and class discussion, identify machine parts and their functions.

Criterion-Referenced Measure

Your instructor will provide you with an oral or written test. Identify machine parts and explain their functions with 100% accuracy.

Tools and Materials

Overhead projector

Other Resources

Information Sheet 4.1
Transparencies T4.1 through T4.11
Teacher-developed quiz

Instructor Actions (instructor directions)

1. Conduct group discussion on identifying machine parts and their functions using information sheet and transparencies.

Resource Materials

1. Information Sheet 4.1
   Transparencies T4.1 through T4.11
   Films
   "401 Multi-Thread-Chain or Double-Locked Stitch." Union Special Corporation, Technical Training, 12005 4th Street, Huntley, Il 60142. 35mm slide presentation plus 7" tape or cassette narration. 50 minutes in color. Purchase for $55.

   "301 Lockstitch." Union Special Corporation, Technical Training, 12005 4th Street, Huntley, Il 60142. 35mm slide presentation plus 7" tape or cassette narrative. 60 minutes in color. Purchase for $65.

   "504 Overedge Stitch." Union Special Corporation, Technical Training, 12005 4th Street, Huntley, Il 60142. 35mm slide presentation plus 7" tape or cassette narrative. 60 minutes in color. Purchase for $75.

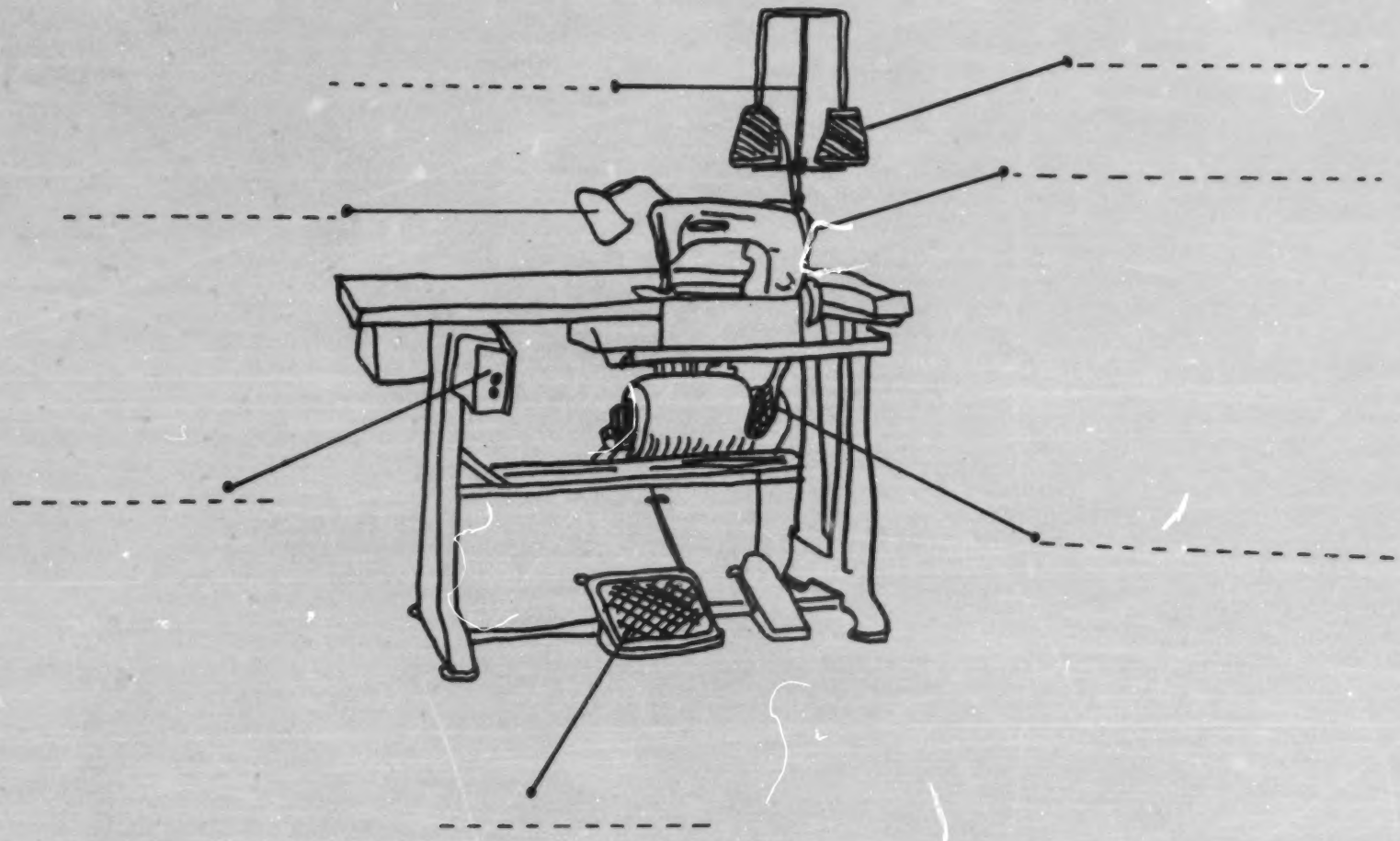
INDUSTRIAL SEWING

Information Sheet 4.1

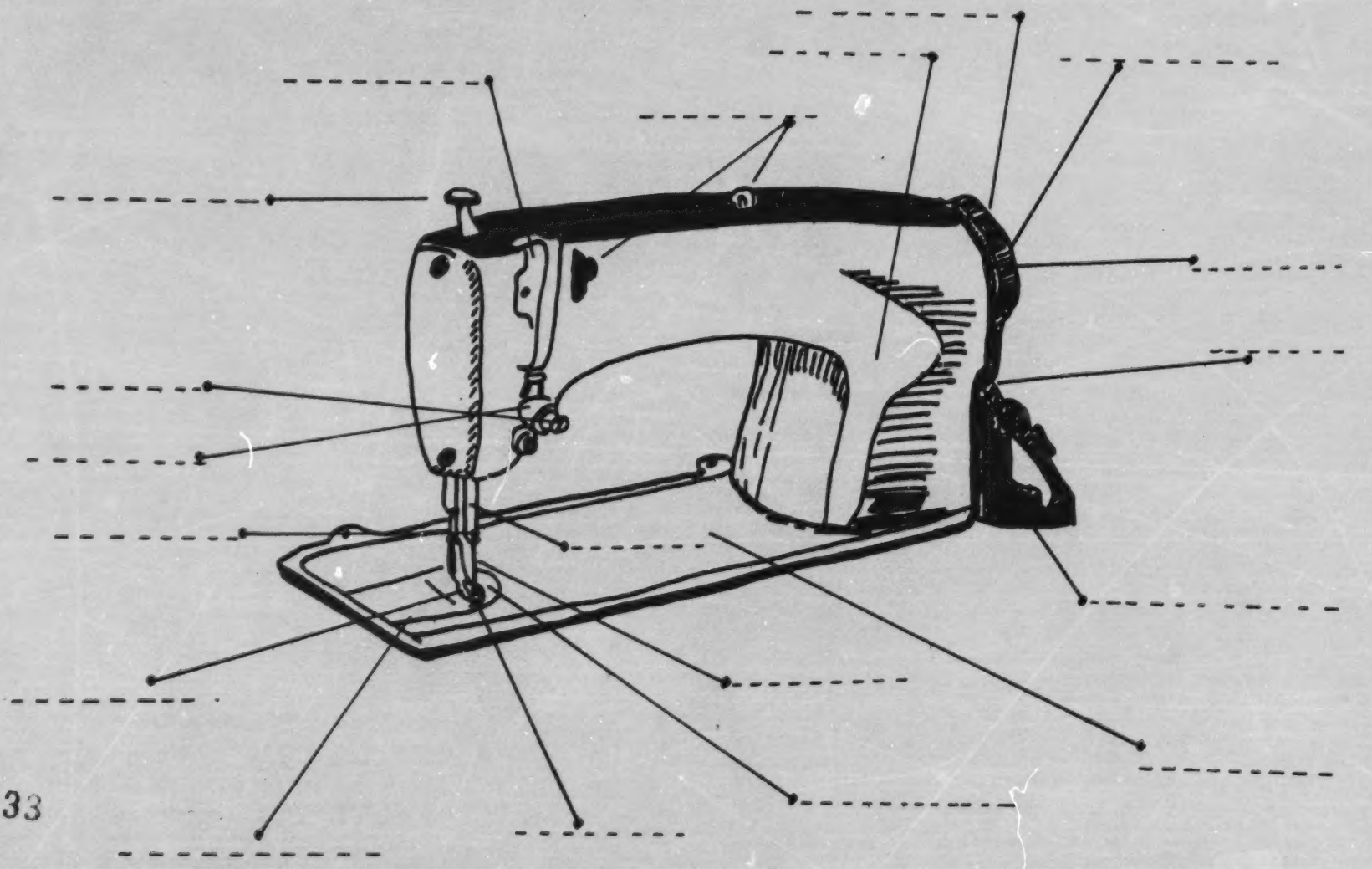
The Basic Lockstitch Industrial Sewing Machine
Definition of Terms

1. Stand - supports and houses the machine.
2. Switch - usually located under stand; turns power on and off.
3. Knee lifter - a lever operated by knee pressure which lifts the presser foot and releases the needle thread tension.
4. Treadle - located at base of stand; a foot control which starts, stops and regulates speed of machine.
5. Lamp - mounted on machine head or table; provides light in sewing area.
6. Motor - located under the table; provides power for sewing.
7. Thread stand - located at the back of the machine; supports cones of thread.
8. Hand wheel - located on the machine head; can be used to position needle.
9. Oil flow window - when machine is running, operator can observe constant flow of oil.
10. Presser foot - holds fabric in place.
11. Vertical shaft housing - carries power from motor to rest of arm of machine.
12. Horizontal shaft housing - supports machine head and carries power to rest of machine.
13. Needle bar - holds needle in place.
14. Presser bar lifter - lifts presser foot by hand.
15. Tension assembly - controls pressure on upper thread.
16. Needle - carries thread through fabric to make stitch.
17. Throat plate - a plate under presser foot with hole for needle to pass through.
18. Feed dog - tooth-like projections immediately under presser foot.
19. Bed plate - opens for access to bobbin.
20. Take up - a device which draws the right amount of needle thread from its supply; releases the right amount for stitch formation; draws back excess thread to set stitches.

Identify the Parts Sheet 4.2



Identify the Parts Sheet 4.3



INDUSTRIAL SEWING LESSON PLAN 5

Analytic Method of Training

Objective

Given reference materials and class discussion, the student will be able to identify thirteen movements for motion economy. Given operator's work station and two stacks of ten pieces of fabric, pick up and align edges, left piece over right, and position them in front of needle in 38 seconds.

Criterion-Referenced Measure

Your instructor will give a quiz on the thirteen movements for motion economy. Identify these with 100 percent accuracy. Your instructor will provide a work station and two stacks of ten pieces of fabric. Align edges and position item in front of needle within 38 seconds.

Tools and Materials

Overhead projector, fabric

Other Resources

Information Sheets 5.1 through 5.3
Transparencies T5.1 through T5.5
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Conduct group discussion of individual skill analysis using information sheet.	1. Information Sheet 5.1 Transparency 5.1
2. Lead group discussion on movements, methods, and posture using information sheet.	2. Information Sheet 5.2 Transparencies T5.2 through T5.4 Film "Work Methods." Bobbin Publications, Inc., P.O. Box 527, 1110 Shop Road, Columbia, SC 29202. 30 minutes in color. Rent for $20.00 per week, Instructor's Manual, $1.50 each, Study Guide, $1.00 each.
3. Have students complete teacher-developed quiz.	3. Quiz
4. Lead group discussion on learning a job using a stop watch. Use information sheet.	4. Information Sheet 5.3 Transparency 5.5

5. As students feel they are ready to demonstrate their skill, be prepared to check their performance.	5. Work station, necessary fabric, stop watch

INDUSTRIAL SEWING

Information Sheet 5.1

Skill Analysis

The sewing machine operator must have good finger dexterity and a keen sense of touch. In addition, the operator must be able to coordinate mind, eyes, hands, and feet. The best machine available is only as good as the operator.

When an operator goes to work, a supervisor or training specialist will evaluate the individual's production progress through the use of an individual skill analysis. For this purpose some industries use a training chart (curve). The evaluation includes a judgment as to whether the operator has met training expectations specified by the chart. Frequently the training supervisor identifies recommendations as to how the trainee can improve production. The steps through which the supervisor goes to evaluate an operator's production progress follow.

1. Reviews progress chart.
   a. Determines training week.
   b. Determines trainee efficiency.
   c. Identifies rejects.

2. Compares trainee efficiency with expected efficiency.

3. Compares product imperfections with quality control person.

4. Talks with operator about progress.
   a. Identifies areas of strengths.
   b. Identifies areas of weakness.

5. Descsribes what help operator needs, if any.

6. Records recommendations.

INDUSTRIAL SEWING

Information Sheet 5.2

Movements, Methods and Posture[1]

The use of techniques to save time and motion is essential in the needle trade if one is to be an effective, efficient operator.

One example of such a technique is the placement of garment sections in relation to the operator (T5.1). If the fabric is close to the operator, less time and energy is spent reaching for the material. Some basic time and motion techniques useful to industrial sewing machine operators follow.

1. Perform pick-ups at the same time.

   An operation requiring the assembly of two pieces of fabric can be accomplished more efficiently if the two pieces are picked up at the same time.

   One piece should be picked up following disposal of a completed piece. As the left hand disposes of the completed operation, the right hand reaches and picks up the next piece. The left hand then moves to the other piece. Both hands are used to align fabric with needle. Remember, the right hand should not pick up and deliver the piece of fabric until the left hand is ready to deliver.

2. Perform pick-up and disposal at the same time.

   In this case, both hands are performing separate tasks at the same time; the disposal of the operation with the left hand and the pick-up of fabric with the right hand.

3. Place work to reduce movements.

   Save time by placing the piece to go underneath on the right. Place the piece to go on top on the left.

4. Eliminate regrasps.

   Grasp fabric at a point at which it will be assembled. This prevents moving the hand in a regrasp.

5. Grasp with thumb down on right hand for long runs.

   The right fingers should be on top, with the thumb underneath. This allows sewing all the way in to point of grasp without a stop.

[1]**Careers in Industrial Sewing,** The Education Committee of the American Apparel Manufacturers Association and the Research and Curriculum Unit for Vocational and Technical Education, Mississippi State University, 1975, pp. 43-45.

6. Keep right hand busy.

   When the right hand must release as the work moves to the needle, the right hand should immediately move to its next function.

7. Sew with the fewest possible stops.

   Always notice the number of stops you are using and be sure you are sewing to the maximum possible length. The right hand grasp often determines the length of sewing between stops.

8. Accomplish work during positioning if possible.

   Do everything you can during the positioning of your work. Sometimes an operator can fold a corner or turn a seam during the pick-up and position time.

9. Hold body movements to a minimum.

   Preposition work so that all handling elements are accomplished with the minimum amount of body movement. For example, if only the arm from the elbow down needs to be moved, do not move the upper arm. Avoid twisting or turning the body. This will reduce fatigue and eliminate extra movements.

10. Perform pick-up and disposal on same side.

    If both hands must be used to accomplish a disposal, usually the pick up and disposal should both be located on the left side. This keeps body movement to a minimum and allows the operator to focus his/her eyes on both hands and work.

11. Use both feet.

    Machine control is easier if both feet are used on the treadle. This will also reduce fatigue because the body is in the most natural position for sewing.

12. Use the machine speed.

    Run the machine as fast as possible. The faster you can sew and keep your machine under control, the more productive you will be.

13. Use the brakes.

    Use the machine treadle brakes. An operator must learn to set heels firmly on the back of the treadle to make sharp, quick stops instead of coasting to a stop.

INDUSTRIAL SEWING

Information Sheet 5.3

Steps in Learning a Job Using a Stop Watch[2]

Assembling Two Pieces

When an operator is doing an operation which involves picking up two components for assembly one should always use simultaneous motions.

This exercise starts by positioning a stack of ten components at each side of the operator. Upon signal reach to each stack simultaneously; pick up and move the top ply from each stack to a point in front of you; align the edges, left piece over right; and position them in front of the needle.

The total elapsed time for assembling the 20 components is computed. The standard time for this exercise is 38 seconds.

Note

To most effectively pick up and align two pieces, the piece to go on bottom should always be picked up by the right hand to avoid regrasps. The instructor will demonstrate this to the trainee.

Achievement of a consistent 100% performance on these exercises constitutes another important accomplishment in the program. The student or instructor should record times. This will indicate student progress to the student and the instructor.

[2]**Careers in Industrial Sewing,** The Education Committee of the American Apparel Manufacturers Association and the Research and Curriculum Unit for Vocational and Technical Education, Mississippi State University, 1975, pp. 43-45.

INDUSTRIAL SEWING LESSON PLAN 6

Needle Specifications

Objective

Given class discussion and reference material, draw and label the parts of a needle. Given a machine with a dull or bent needle, replace the needle. Once replaced, the needle bar screw should be tight and the long groove on the needle should be facing the last thread guide.

Criterion-Referenced Measure

Draw and label the parts of a needle with 100% accuracy. Replace a defective needle with a new one.

Tools and Materials

Screwdriver, needles

Other Resources

Information Sheets 6.1, 6.2
Transparency 6.1
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Conduct a group discussion on the history of the needle.	1. **The Mechanization of Sewing**, pp. 4-5. Union Special, 400 N. Franklin Street, Chicago, IL Booklet available for $2.00
2. Lead a group discussion on needle parts which includes these topics. a. Features that vary b. Selecting style and size	2. Transparency 6.1
3. Demonstrate steps in changing a needle using Information Sheet 6.1 as a guide.	3. Information Sheet 6.1
4. Lead a discussion on needle specifications. Use Information Sheet 6.2 as a guide.	4. Information Sheet 6.2 "Needle Information." Union Special Corporation, Technical Training, 12005 4th Street, Huntley, IL 60142. 35mm slide presentation plus 7" tape or cassette narration. 30 minute black and white film. Purchase for $10.

5. Have students complete a teacher-developed quiz on the parts of the needle.	5. Quiz (Sheet 6.3)
6. As students feel they are ready to demonstrate their skill, be prepared to check their performance.	

INDUSTRIAL SEWING

Information Sheet 6.1

Procedure for Changing Needles

Tools and supplies: screwdriver, new needle

1. Turn off machine.
2. Turn handwheel until nedle bar is at highest point.
3. Grasp old needle on shank.
4. With remaining hand, loosen needle bar screw with screwdriver.
5. Remove old needle and discard.
6. Insert new needle into bar with long groove facing the last thread guide.
7. Retighten needle bar screw.
8. Check position of needle by turning handwheel one cycle.

INDUSTRIAL SEWING

Information Sheet 6.2

Needle Specifications

1. The operations manual for each machine specifies the type of needle to use for the machine. The manual will also cover the size of the needles available for that particular machine.

2. Needles are numbered based on overall thickness - the smaller the number, the smaller the needle.

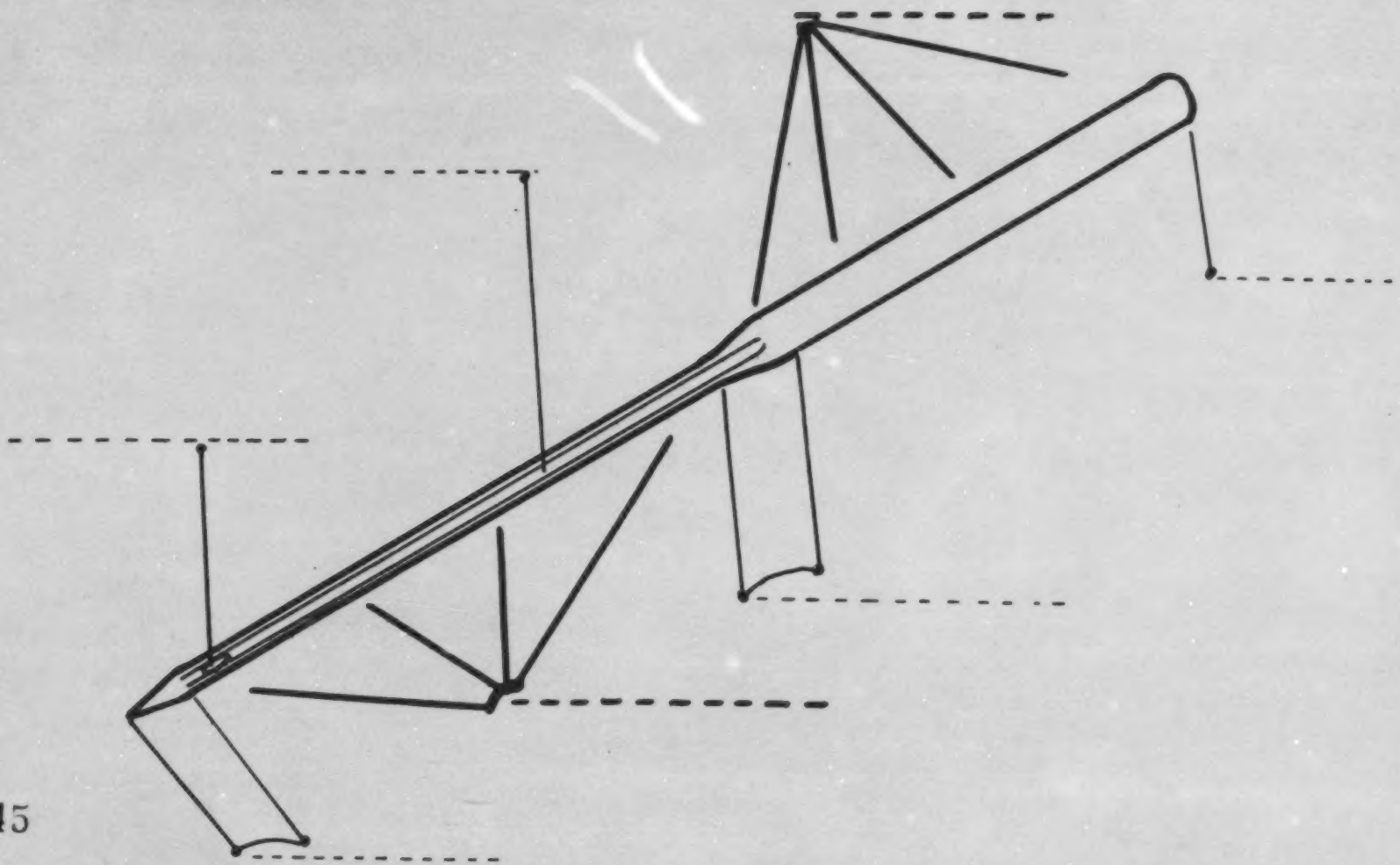
3. The size of the needle ranges from 7 or .022 to 28 or .084.

4. Needles used in clothing manufacturing range from 12 or .032 to 24 or.054.

5. Small needles are used for stitching fine fabrics such as silks. Larger needles are used for stitching heavy fabrics such as canvas.

6. In industry, the supervisor frequently determines the needle size required for a specific operation.

Identify the Parts **Sheet 6.3**



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INDUSTRIAL SEWING LESSON PLAN 7

Proper Care of Machine

Objective

Given an industrial sewing machine, clean the machine. No lint, dust, or oil should be visible after cleaning. Given a sewing machine light assembly, replace a light bulb. The replaced bulb must be hand tight, must match the wattage of the old bulb, and be aimed on the presser foot in a lowered position. Given an automatic oiling machine with a readily accessible oil reservoir, add oil to the machine reservoir. The oil level must reach but not exceed the "high" mark in the reservoir. Given an oil can with spout, oil a machine having lubrication points. All points must be lubricated with a minimum of four can pulsations.

Criterion-Reference Measure

Your instructor will select a machine for you. Clean the machine. A machine light has "blown." Replace the bulb. Add oil to a machine identified by your instructor as being in need of oil. Oil each lubrication point on a sewing machine.

Tools and Materials

Brush, screwdriver, bulb, oil, oil can with spout, rags, fabric scraps

Other Resources

Instructor Actions (instructor directions)	Resource Materials
1. Present demonstration using information sheets. a. Clean lint from machine b. Replace light bulb	1. Information Sheets 7.1, 7.2
2. Present demonstration using information sheets. a. Add oil to oil reservoir b. Oil machine having lubrication points	2. Information Sheets 7.3, 7.4
3. As students feel they are ready to demonstrate their skill, be prepared to check their performance.	

INDUSTRIAL SEWING

Information Sheet 7.1

Procedure for Cleaning Lint from Machine

Tools and supplies: clean rags, small brush, screwdriver, fabric scrap

1. Turn machine power off.
2. Remove all work from machine area.
3. Wipe excess oil from machine with scraps and discard.
4. Brush all lint and dust from machine head, bed, and motor area.
5. Raise presser foot and remove throatplate with screwdriver.
6. Brush lint and dust from feed dog and top of bobbin case assembly.
7. Turn machine head to expose hook and bobbin case assembly.
8. Brush lint and dust from hook and bobbin case.
9. Return head to original position and replace throatplate.
10. Place 3" x 4" (7.6cm x 10.2cm) scrap over throatplate and lower presser foot to sew position. Scrap will absorb oil dripped from needle bar overnight.
11. Place cover over machine head.

INDUSTRIAL SEWING

Information Sheet 7.2

Procedure for Replacing Machine Light Bulb

Tools and supplies: new bulb

1. Turn power switch to off position.
2. Remove bulb cover, if applicable.
3. Unscrew and discard spent bulb.
4. Screw in new bulb hand tight.
5. Replace cover, if applicable.
6. Turn power switch on.
7. Aim center beam on presser foot in lowered position.

INDUSTRIAL SEWING

Information Sheet 7.3

Procedure for Adding Oil to Oil Reservoir

Tools and supplies: fabric scraps, oil

1. Insert scrap material under needle.
2. Begin stitching and observe oil gauge (usually on right side of machine head).
3. If gauge indicates machine is low on oil, stop machine, turn power off, and tilt head back.
4. Observe reservoir level marks to substantiate gauge reading.
5. Add oil to "high" mark in reservoir.
6. Return machine head to sew position.
7. Clean excess of spilled oil from machine.

INDUSTRIAL SEWING

Information Sheet 7.4

Procedure for Oiling Machine Having Lubrication Points

Tools and supplies: oil, oil can with spout, rags, fabric scraps

1. Locate each lubrication point on machine (usually indicated by arrows).
2. Insert oil can spout into each point and lubricate by pumping can handle or pressing can bottom.
3. Wipe excess oil from around oil points.
4. Place scrap fabric under needle and engage power to circulate oil.
   Note: Machines oiled through points should be oiled daily.

INDUSTRIAL SEWING LESSON PLAN 8

Quality Construction Specifications

Objective

Given reference material and group discussion, identify quality specifications for seams, topstitching, backstitching, and production.

Criterion-Referenced Measure

Your instructor will provide you with a quiz. Respond to the quiz with 100% accuracy.

Tools and Materials

Garments or garment sections which have been seamed, topstitched, or backstitched.

Other Resources

Information Sheets 8.1, 8.2, 8.3, 8.4
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Conduct a group discussion on quality specification for these topics. a. Seams b. Topstitching c. Backstitching	1. Information Sheets 8.1, 8.2, 8.3 Garment or garment sections which have been seamed, topstitched, and lockstitched.
2. Conduct a group discussion on quality specifications for production.	2. Information Sheet 8.4
3. Have students complete a teacher-developed quiz.	3. Quiz

INDUSTRIAL SEWING

Information Sheet 8.1

Quality Specification for Seams

1. No open seams; be sure to concentrate on seams as they are being sewn.
2. No raw seams or edges; follow gauges or guides as instructed for correct seam allowance.
3. Maximum cut off 1/8 inch (.32 cm) to 1/4 inch (.64 cm) when using a knife machine.
4. Ten to twelve stitches per inch, or as instructed.
5. Seams need to match when sewing over a previous seam and fitting; for example, sewing a sideseam and matching underarm seams.
6. Trim all threads resulting from repairing seams or stitching.
7. No missing, skipping or loose stitches.

INDUSTRIAL SEWING

Information Sheet 8.2

Quality Specifications for Topstitching

1. Topstitching - Stitching which is visible on the finished side of garment.
2. Topstitching must be accurate and neat.
3. Seam width must be uniform.
4. Stitches must be perfectly formed.
5. There must be no missing, slipping or loose stitches.

INDUSTRIAL SEWING

Information Sheet 8.3

Quality Specifications for Backstitching

1. Backstitching - sewing back and forth over the same row of stitching at start or finish of seam.
2. Use backstitching when there is no other stitching over ends of seams.
3. Backstitching prevents seam from raveling.
4. If backstitching, use uniform start and stop.
4. Backstitching must be neatly placed on the beginning and finishing of each seam.

INDUSTRIAL SEWING

Information Sheet 8.4

Quality Construction Specifications for Production

1. During sewing operation, stop after every four or five pieces and spot check a few pieces for bad stitches.

2. Do not sew over an earlier bad operation. Have the supervisor check bundle.

3. If you make a repair, correct it immediately, and place it in its proper place in the bundle. If you are instructed to lay piece aside until completion of bundle, then fix repair and replace piece in its proper place in the bundle.

4. If a defective piece is found such as a flaw in fabric, mill ends sewn together, torn fabric, or shaded pieces, call the supervisor to have a recut made or follow instructions as to what to do. This procedure is also done in case of bad cutting, seams not fitting, notches left out of work, or punch holes missing or in wrong place.

5. When the machine has been oiled, sew off on scrap of fabric thoroughly so that oil will not get on the work. Leave swatch of fabric under presser foot at end of day and sew off in the morning before starting work.

6. Operators are not allowed to have food or drink open at the machine. There is a canteen for morning and afternoon breaks and lunch time.

7. Please observe all instructions carefully. If necessary ask questions for a complete understanding on your part.

INDUSTRIAL SEWING LESSON PLAN 9

Garment Layout

Objective

Given reference material and group discussion, identify garments with waistline, without waistline, and two-piece garments and describe sequence of construction.

Criterion-Referenced Measure

Your instructor will provide you with a quiz. Respond to quiz with 100% accuracy.

Tools and Materials

Overhead projector

Other Resources

Information Sheet 9.1
Transparencies T9.1 through T9.9
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Conduct a group discussion on garment layout in the industrial sewing industry using information sheet.	1. Information Sheet 9.1 Transparencies T9.1 through T9.3
2. Conduct a group discussion on the layout sequence for constructing these garments. a. One-piece garment b. One-piece garment joined at waistline c. Two-piece garment (i.e., shirt, pants, skirt, blouse)	2. Transparencies T9.4 through T9.9 "It's About Time." Hughes Aircraft Company, IAS Department, Industrial Products Division, 2020 Oceanside Blvd., Oceanside, CA 92054. Color film. Rent free for two weeks.
3. Teacher-developed quiz	3. Quiz
4. Demonstrate the sequence in construction by constructing these garments. a. One-piece garment b. One-piece garment joined at waistline c. Two-piece garment	

INDUSTRIAL SEWING

Information Sheet 9.1

Garment Layout

In the sewing industry, many garments are cut at once. In the cutting room of a manufacturing plant, materials are laid out in several layers or plies. The pattern marker is then put on top of the material, and a number of garments are cut at once. The cutters and lay out people or spreaders, as they are called, must be very conscientious and expert to accomplish the tasks before them. If they make a mistake, it is very costly to the company.

A garment consisting of a full length design without a waistline will have fewer parts than a garment sewn together at the waistline. Most manufacturers are trying to find ways to cut costs, and yet come up with merchandise that will sell and have style.

INDUSTRIAL SEWING LESSON PLAN 10

Finishing and Pressing Process

Objective

Given reference material and group discussion, respond to a quiz on the finishing and pressing process with 85 percent accuracy.

Criterion-Referenced Measure

Your instructor will provide you with a quiz.

Tools and Materials

Overhead projector, iron, pressing board

Other Resources

Information Sheet 10.1
Transparencies T10.1 through T10.7
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Conduct a demonstration and class discussion on the finishing and pressing process. Use information sheet and transparencies.	1. Information Sheet 10.1 Transparencies T10.1 through T10.7
2. Arrange a field trip to view the finishing and pressing process in a local garment manufacturing plant.	2. Field trip
3. Have students complete a teacher-developed quiz on the finishing and pressing process.	3. Quiz

INDUSTRIAL SEWING

Information Sheet 10.1

Finishing and Pressing Process

The construction of a garment completes one cycle of the industrial sewing operation. However, there are other operations to be completed before the garment can be shipped.

In this transparency (T10.1) the operator is performing the finishing tasks. This includes tying bows on the blouse sleeve. The operator then inspects the garment and places it on a hanger (T10.2). Next, the garment is tagged for size (T10.3). Following this process, the garment moves by conveyor to the pressing center (T10.4). You are viewing a totally automated process for pressing and packaging (T10.5 , T10.6). After the garment is packaged, the order is filled for shipping (T10.7).

INDUSTRIAL SEWING LESSON PLAN 11

Field Trip

Objective

Given class discussion and a trip to a garment factory, respond to a quiz on industrial sewing plant arrangement, stations, operations, and rest area.

Criterion-Referenced Measure

Your instructor will provide a quiz. Record your answers on a separate sheet of paper with 85 percent accuracy. Return your answers and the quiz to the instructor.

Tools and Materials

Slide projector, screen, slides

Other Resources

Information Sheets 11.1, 11.2
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Conduct a class discussion on the proposed visit to a local garment manufacturing plant.	1. Information Sheet 11.1 Slides of local plant, if available
2. Give students Information Sheet 11.2, Field Trip Observation Form.	2. Information Sheet 11.2
3. Conduct field trip.	
4. Conduct discussion of field trip using Student Observation Form.	
5. Have students complete teacher-developed quiz.	5. Quiz

INDUSTRIAL SEWING

Information Sheet 11.1

Field Trip to Industrial Sewing Plant

Having completed the various operations on simulated and real garments of different styles and designs, today we will plan an interesting trip to an industrial sewing plant.

We will view slides and discuss the different sections of operations in a plant. We will visit this plant tomorrow.

These are some points of interest to observe during this presentation.

1. Observe the arrangements of the machines in the plant.
2. Observe the locations of the machines; they are in several different sections.
3. Observe that each section of the plant will be doing certain operations of the garments being produced.
4. Observe the finishing and preparation for shipping of the garments.
5. Observe the cafeteria section of the plant - where the operators relax during a break period provided twice a day. The operators usually eat lunch and watch television.
6. Notice that the operators do not talk, but work constantly in order to produce more garments. They are on production - so the more garments they turn out, the more money they make.
7. Conduct question and answer session.

Summary

From the slides just shown, you will gather that the first section of machines puts the small parts of the garment together - collars, cuffs, yokes, lace, etc.

The second section will join the shoulder seams of the garments and yokes if necessary - then pass on to the next section.

The third section will make sleeves and set them into the garment. Here you will see the several different styles of sleeves being set (round, raglan, etc.)

The fourth section will put pockets in or on the garments, side seams and sometimes binding, should the style call for this.

The fifth section will hem the sleeves and bottom of the garment (this is the finishing section), and put buttonholes, buttons, or other fasteners in place.

The shipping and inspection section of the plant will prepare the garment for

shipment. First comes the trimming and inspection, then the folding or hanging before boxing or bagging. Labeling the boxes or bags by order number, style, and lot number is next. The bagged or boxed garments are then ready to be prepared for shipment. The last person (shipper) will check each box for correct amount, color, size, style, and lot number. Each box is then prepared to ship to a warehouse or an individual customer or store.

You will visit the cafeteria area. Observe how clean the area is kept. Look for food machines, TV, and a dining area.

Tomorrow we will actually visit this plant. You should try to remember the operations discussed today and see how many things you recognize from the presentation. On your return you will be required to write a brief paper on what you saw and what you learned from your trip. You will list the different machines in our laboratory and tell at least two operations you saw workers performing on each type machine.

You will tell what operations you think you would like to perform and why you would like to perform this duty.

Tell what impressed you most about the trip, and why you feel your trip was a benefit to you as a student and future machine operator.

Do you think you would like to work for this plant and why?

Would you like to take more field trips?

At what specific operation do you think you could succeed?

INDUSTRIAL SEWING

Information Sheet 11.2

Field Trip Observation Form

Observations	Comments
1. Arrangement of machines in plant	
2. Number of stations performing different operations	
3. Finishing and preparation for shipping garment	
4. Rest area/lounge/cafeteria	
5. Conversation by operators in plant	

INDUSTRIAL SEWING LESSON PLAN 12

Job Interview

Objective

Given reference material and class discussion, the student will complete a quiz on securing a job with 100 percent accuracy.

Criterion-Referenced Measure

Your instructor will provide a quiz. Complete the quiz and return it to your instructor.

Tools and Materials

Facilities to duplicate certain information sheets.

Other Resources

Information Sheets 12.1 through 12.5
Teacher-developed quiz

Instructor Actions (instructor directions)	Resource Materials
1. Have students complete the Preassessment Instrument.	1. Information Sheet 12.1 Answers: 1. d; 2. d; 3. c; 4. b; 5. a
2. Introduce World of Work and the job application. Have students complete application blanks and reference blanks.	2. Information Sheet 12.2; duplicate forms for class use
3. Conduct a class discussion on the interview using information sheet.	3. Information Sheet 12.3
4. Conduct a role-playing session in which students play the roles of interviewer and interviewee. Use information sheet to evaluate performance of each student.	4. Role play job interview Information Sheet 12.4; duplicate for your evaluation of each student
5. Have students complete tacher-developed quiz.	5. Quiz (questions on Information Sheet 12.5 may be helpful) Answers: 1.b; 2. C; 3. D; 4. D; 5. C **Job Seeking: How & Where.** South Carolina Department of Education, Office of Vocational Education, Columbia, SC 29201.

INDUSTRIAL SEWING

Information Sheet 12.1

Securing Employment
Preassessment Instrument

On a separate sheet of paper, number 1-5. Write the letter of the one best answer beside the appropriate number.

1. If a group of individuals in our society values achievement, which of the following statements would reflect that value?

   a. I earned $25,000 last year.
   b. The boss told me I can have my present job as long as I want.
   c. My new job leaves me plenty of free time to spend with my family.
   d. Not one customer complained about the service today.

2. If a group of individuals in our society holds the attitude that society owes them a living, which of the following statements might be said by an individual in that group?

   a. Since the hiring of the new employees, I do not have enough work to keep me busy.
   b. I will be working late to finish cleaning the equipment.
   c. I will work Saturday if I can have Friday off.
   d. I am going hunting, so I will call in sick today.

3. Sally has been planning to enroll in the chef's training course at Center Vocational School in January. She was offered a job as secretary for the high school from which she graduated at a starting salary of $400 a month. She decided to accept the offer and postpone her career goals. By working at the high school she could give her brother a ride to school. Which of the following would not be an example of her reasons of working?

   a. Family responsibility
   b. Service to others
   c. Career development
   d. Economic security

4. Which of the following statements about work is true?

   a. People have little choice in the type of work they do.
   b. People achieve psychological rewards from working.
   c. People's reasons for working have no effect on job selection.
   d. People learn how to work when they acquire their first job.

5. Societies change. More women are seeking employment outside the home. What effect may this have on jobs?

   a. More service jobs will open.
   b. Jobs will become less complex.
   c. Workers will have a smaller job selection.
   d. Fewer machines will be used on the job.

INDUSTRIAL SEWING

Information Sheet 12.2

Filling Out an Application

Most people are in the work force for 25 to 40 years. In fact, most people spend an average of half their lifetimes involved in work.

Because work plays a significant role in personal lives and in society, being able to secure that work is important. However, there is more to getting a job than just job skills. A prospective worker must possess the necessary attitude to be able to work with other people.

An important step in securing a job is the accurate completion of an application form. Most application forms include requests for personal data, education, and previous experience.

Using a ball point pen, complete an application form at this time.

JOB APPLICATION FORM

Print In Ink

Information Sheet 12.2

				date of application	
PERSONAL DATA name: first m.i. last			Social Security number	telephone number	
street address			city	state	zip code
date of birth	height	weight	marital status (circle) single married divorced widowed separated	ages of dependent children	number of other dependents
husband/wife name		occupation		where employed	
who should be notified in case of emergency? address				telephone number	

HEALTH

What is the present condition of your health?_____

List any illnesses in the past year_____

Do you have any physical defects?_____ Explain_____

EDUCATION (circle last year completed)

school	name	highest grade completed	from	to	major subjects
elementary school		1 2 3 4 5 6 7 8			
high school		9 10 11 12			
technical or college		13 14 15 16+			
other		how long?			

POSITION

Position applying for? _____

What experience have you had that would qualify you for this position? _____

_____

Date available to start _____

Are you applying for full time _____ **or part time** _____

WORK HISTORY (start with most recent employment)

Where employed: name and address	time employed from to	position	supervisor name	telephone number

reason for leaving _____

reason for leaving _____

reason for leaving _____

reason for leaving _____

May we contact your present employer? yes _____ **no** _____

DO NOT WRITE IN THIS SPACE

I understand that, if employed, misrepresentation or omission of facts called for in this application is cause for dismissal

Signature as shown on Social Security card _____

REFERENCES

Name_____

Address_____

Telephone_____

Position_____

Name_____

Address_____

Telephone_____

Position_____

Name_____

Address_____

Telephone_____

Position_____

Name_____

Address_____

Telephone_____

Position_____

INDUSTRIAL SEWING

Information Sheet 12.3

Tips for Job Hunters

1. Information you need to have in choosing a job

   a. Type of work done.
   b. Place of employment.
   c. Requirements for getting the job (training and other qualifications).
   d. Advancement possibilities (in salary and responsibilities).
   e. Working conditions.
   f. Side benefits.
   g. Disadvantages.
   h. Employment outlook (this information may be found in career pamphlets, career books, and the Occupational Outlook Handbook in the library. Talk with people employed in the work in which you are interested. They are valuable sources of information.)

2. Sources of information on locating jobs

   a. Newspaper advertisements.
   b. Notices of civil service examinations on the bulletin board at the post office.
   c. Telephone directories.
   d. Suggestions from friends and relatives who may know of openings.
   e. The South Carolina Employment Service Office. (There are no charges by the State Employment Service for securing one a job. Commercial employment agencies do charge.)

3. The interview

   a. Try to learn ahead of time about the company and its products.
   b. Be neatly and appropriately dressed for the interview.
   c. Be on time for the interview; a busy employer may have to keep you waiting; be prepared to wait if necessary.
   d. Try to overcome nervousness or shortness of breath. (It helps to take a deep breath.)
   e. Hold yourself erect - do not slump down in the chair.
   f. Speak distinctly; do not chew gum; the ability to communicate is very important.
   g. Show frankly that you want the job and why.
   h. Answer questions in an honest and straightforward manner. Be realistic about school activities.
   i. Ask questions about the work. Show your interest in what you can contribute as well as in what the employer can offer you in salary, working hours, vacations, etc. Present as many positive things about yourself in as short a period of time as possible.
   j. Indicate your willingness to learn.
   k. Be willing to fill in application blanks, take a physical examination or tests on request. (Be sure to have your resume with you.)

1. Be responsibe to the signal from the employer that the interview is over. Thank him and leave.

4. The ability to keep that first job

   a. Be professional in telephone usage and activities of the business.
   b. Attitude spells profit; a positive attitude towards business is most important.
   c. Be punctual and regular in attendance.
   d. Be ethical. Do a day's work for a day's pay.

Note: A social security number is a "must." Sometimes employers also request your birth certificate.

Having the information above will help you fill in an application. Be sure to write legibly. Use black or dark blue ink. If you type, it would be well to fill in the application on the typewriter unless otherwise requested.

Follow the same rules in writing a letter of application. A letter of application should be about one page in length. Show a genuine interest in the job; emphasize how your qualifications meet the requirements of the job.

INDUSTRIAL SEWING

Information Sheet 12.4

Interview Evaluation

Name_____

Job Applying for_____

	Below Average	Average	Above Average	Excellent
1. Personal Appearance	1	2	3	4
2. Attitude	1	2	3	4
3. Ability to Communicate	1	2	3	4
4. Interest	1	2	3	4
5. Self-Confidence	1	2	3	4
6. Career Goals	1	2	3	4
7. Sense of Humor	1	2	3	4
8. Maturity	1	2	3	4
9. Apparent Competence	1	2	3	4

Comments:

_____

_____

_____

_____

_____

_____

_____

_____

Recommendations:
(check appropriate box)

1. ☐ Would hire

2. ☐ Would not hire

Evaluator:

_____
(Signature)

_____
(Date)

INDUSTRIAL SEWING

Information Sheet 12.5

Securing Employment
Quiz

On a separate sheet of paper number 1-5. Write the letter of the one best answer by the appropriate number.

1. Which of the following statements about work is true?

   a. A person has little choice in the type of work he/she does.
   b. A person achieves psychological rewards from working.
   c. A person's reasons for working have no effect on job selection.
   d. A person learns how to work when he/she acquires his/her job.

2. Lynda lives in a small mid-western town with protective parents. After high school she plans to go to Euroupe and find a job. She does not really care what type of job she holds. Going to Europe sounds interesting. Earning money while she is there will enable her to stay as long as she would like. What value may have a big influence on Lynda's decision to work while in Europe?

   a. Loyalty
   b. Obediance
   c. Independence
   d. Equality

3. If a group of individuals in our society holds the attitude that society owes them a living, which of the following statements might be said by an individual in that group?

   a. Since the hiring of the new employees I do not have enough work to keep me busy.
   b. I will be working late to finish cleaning the equipment.
   c. I will work Saturday if I can have Friday off.
   d. I am going hunting, so I will call in sick today.

4. Which of the following would not be considered a source of information regarding job availability?

   a. Union Offices
   b. Former employers
   c. State Employment Service
   d. Internal Revenue Service

5. Jobs are grouped into clusters by considering which of the following?

   a. Education
   b. Skills
   c. Training
   d. Experience

REFERENCES

Bane, Allyne. **Creative Clothing Construction.** McGraw-Hill Co., 1966.

Education Committee of the American Apparel Manufacturers Association and Research and Curriculum Unit for Vocational and Technical Education (Mississippi State University). **Careers in Industrial Sewing for the Apparel Manufacturing Industry, Teacher-Student Guide.**

Installation and Operating Instructions. U. S. Blind Stitch Machine Corp., 1979.

New Jersey Department of Education. **Industrial Needle Trades.** 1977.

New Jersey Department of Education. **Power Sewing.** 1975.

Operating Instructions for the Reece Series S2 Machine. The Reece Company.

Reader's Digest Complete Guide to Sewing. Reader's Digest Association, Inc., 1976.

South Carolina Department of Education. **Job Seeking: How & Where.** Columbia, S.C.: State Department of Education, 1981.

Union Special Lockstitch Formation Type 301. Union Special Industrial Sewing Machines, 1980.

Union Special Lockstitch Formation Type 401. Union Special Industrial Sewing Machines, 1976.

Vogue Sewing Book. Vogue Patterns, 1975.

MODULES ANSWER KEY

Module 1: Introduction to Single Needle Lockstitch Machine

Identifying Parts and Their Purpose

1. treadle
2. knee lifter
3. true
4. driving pulley
5. false
6. true
7. true

Threading the Machine

1. true
2. thread retainer
3. true
4. tension assembly
5. long groove

Removing the Bobbin Case

1. off
2. false
3. highest
4. left
5. true
6. true
7. false
8. true

Winding the Bobbin

1. bobbin
2. adjusted
3. regulator

Replacing a Wound Bobbin

1. slot
2. four
3. latch
4. click
5. counter-clockwise
6. rear

Operating the Lockstitch Machine

1. true
2. knee lifter
3. true
4. same
5. true
6. fatigued

Tying on Thread

1. false
2. true
3. true
4. true
5. true

Measuring with Gauge and Ruler

1. cloverleaf
2. true
3. true
4. false

Module 2: Mathematics in the Needle Trades

Computing Piecework

1. false
2. 300
3. false
4. true
5. true

Check-Out Activity

1. 100 pieces
   .30 per piece
   000
   300
   $30.00 per day

2. $ 3.10 per hour
   x 8 hour day
   $24.80

3. 80 pieces per hour
   .05)4.00
   4 0

4. 20 garments
   x .05 per piece
   $1.00 per bundle

   4 bundles per hour
   1.00) 4.00
   4 00
   00

Module 3: Darts

Constructing Straight/Shaped Darts

1. true
2. true
3. true
4. true
5. semi-slanted

1. false
2. true
3. false
4. true
5. true

Constructing Double-Pointed Darts

1. false
2. double-pointed
3. true
4. shape

Module 4: Seams

Sewing Straight Seams

1. false
2. true
3. false
4. true

Sewing French Seams

1. false
2. true
3. false
4. true

Sewing Flat-Felled Seams

1. true
2. false
3. true
4. true

Module 5: Collars

Setting a Circle Collar

1. refer to list page
2. true
3. false
4. clip - to cut into the fabric
   trim - to cut excess fabric away
5. Material needs to be soft in order to be tied.

Setting a Sandwich Collar

1. Refer to list page.
2. false
3. bodice, facing
4. to keep the facing in place

Making (or Running) Collars

1. It should be pressed on the top part of the collar.
2. to keep collar free of bulk
3. a. make collar; b. trim and turn collar; c, topstitch collar (optional)
4. true

Module 6: Cuffs

Making and Setting All Types of Cuffs

1. false
2. under
3. Interfacing is used to provide extra body.
4. The notched side is left open.
5. no

Making and Setting French/Placket Cuffs

1. shirt
2. true
3. true
4. smooth and wrinkle-free
5. false
6. true

Making and Setting Bound Sleeve Cuffs

1. true
2. outside
3. stitched down
4. true

Module 7: Sleeves

Constructing and Setting Sleeve With Fullness

1. constructed/seamed/made
2. true
3. shirring, darting
4. shoulder seam

Constructing and Setting Sleeve Without Fullness

1. true
2. true
3. false

Module 8: Zippers

Setting Kissing and Separating Zippers

1. conventional
2. true
3. false
4. kissing
5. lapped
6. true

1. separating
2. French
3. closed
4. 1/4 inch (.04 cm)

Setting Lapped Zipper

1. true
2. 1/2 inch (1.3 cm)
3. true
4. coil

Setting Cut-in Zipper

1. true
2. false
3. true
4. true

Setting Invisible Zipper

1. false
2. true
3. top
4. plastic

Setting Fly Zipper

1. right
2. left
3. top
4. bottom

Module 9: Pockets

Constructing and Setting Patch Pockets

1. false
2. inside/onseam/side seam
3. sportswear/jeans
4. square

1. true
2. location
3. topstitched
4. true

Constructing and Setting Onseam (Side-Seam) Pockets

1. true
2. waist
3. puckers
4. true

Constructing and Setting Welted Pockets

1. true
2. back
3. true
4. backstitch

Module 10: Serger (Overlock) Machine

Purpose and Serging Edge of Cloth

1. serger
2. crack
3. finished
4. safety stitch
5. reinforces

1. true
2. true

Serging a Seam

1. 1/8 inch
2. presser foot
3. feed area

Setting a Blouse/Shirt Cuff

1. true
2. false
3. true
4. true
5. true
6. true
7. true
8. false
9. false

Setting a Tailored Cuff
1. true
2. false
3. true

Setting Sleeves
1. true
2. false
3. false

Making a Tie Belt
1. true
2. true
3. true

Setting Elastic
1. true
2. false
3. true

Hemming Sleeves
1. true
2. true

Setting Ruffles
1. false
2. true

Module 11: Blindstitch Machine

Purpose and Threading the Machine
1. hem
2. curved
3. face
4. penetration
5. finish
6. folder

1. true
2. true
3. false
4. false

Blindstitching With Skip Stitch
1. true
2. false
3. true
4. true
5. false

Hemming With a Folder Attachment
1. true
2. true
3. true
4. true
5. true

Module 12: Button Sew Machine

1. false
2. true
3. false
4. false

Module 13: Buttonhole Machine

Parts and Purpose
1. cut-after buttonhole
2. stitching, cutting, trimming the thread, and stopping with clamps in a raised position
3. barring stitches

Gauged Buttonhole
1. false
2. true
3. true
4. false

Module 14: Zig Zag Machine

1. false
2. true
3. true
4. true

Module 15: Knife Machine

1. false
2. true
3. true
4. true

Module 16: Bar Tack Machine

1. true
2. false
3. false
4. true
5. false

Module 17: Double-Needle Felling

Straight Flat-Felled Seams
1. false
2. true
3. true
4. true

Curved Flat-Felled Seams
1. true
2. true
3. false

Module 18: Chainstitch Machine

1. false
2. false
3. true
4. false
5. true
6. true

Module 19: Special Attachments

Gauges
1. false
2. false
3. true
4. true

Zipper Presser Foot
1. true
2. true
3. false

Cording Attachment
1. true
2. false
3. true

Hemming, Shirring, Binding
1. folder
2. shirring
3. tapes, braids

Module 20: Special Operations

Topstitching
1. false
2. false
3. true
4. true

Mitering
1. true
2. true
3. true
4. false

GLOSSARY OF TERMS

Throughout the school year, industrial sewing students are confronted with words which may not be in their present vocabulary. It is important that the student know these words and understand their meaning in order to better operate and care for the equipment.

The instructor may use this list as it relates to each module or begin with the first word and assign a certain number of words and definitions for each week's assignment. With either method, the industrial sewing student should know all the words and definitions with at least 80 per cent accuracy by the end of the school year.

INDUSTRIAL SEWING VOCABULARY WORDS

Accessories – Parts not considered components of the sewing machine head as advertised and sold, but of assistance in the fullest use and maintenance of the machine.

Adjust – To alter so as to make fit.

Adjustment – Setting or timing the position of a part or group of parts in relation to one or more other parts in a machine.

Allowance – To provide for; to give.

Alter – To change; become different.

Alteration – The act of altering or changing; a change or variation.

Apron – A protective covering.

Applique – A small patch of fabric used as a decorative design on a garment.

Arm – The part of the machine head overhanging the bed (or platform) of the machine and containing the arm shaft and other driving mechanisms.

Assemble – The act of putting parts together in working order, as of a machine, garment, etc.

Attachment – A device added to the machine to assist in the performance of specialized operations; a work aid for the operator, usually attached to the sewing machine.

Automatic – A system of oiling that usually requires only the lubrication maintenance of the correct oil level in one central reservoir. All necessary oiling locations receive their supply from this reservoir during machine operation by some mechanical means.

Backing – A strip of linen or other material placed on the underside of part of a garment to take the strain.

Back stitch – A reverse stitch used at the beginning and end of stitching to reinforce and prevent raveling.

Back strap – Strap across the back of a vest at the waist. This is usually fitted with a buckle and used to adjust the fit of the garment, within limits, to the wearer's requirements.

Balance – Garment balance is the adjustment of the back and front lengths in harmony with the natural attitude of the figure.

Balance marks – Notches or nips are generally put at the side seams, shoulder seams, rear arm and forearm seams, and wherever else necessary to preserve the balance of the garment. They also serve as guides when component parts are being seamed together.

Balance wheel – An obsolete term to identify the hand wheel or the machine pulley fitted with counterbalance to smooth out the rotation of the arm shaft.

Ball tips – Cloth point needles on which the tips are rounded rather than cone shaped.

Band knife – A mechanically driven endless-rotating blade which passes through a slot in a table. It is normally used for cutting many layers of cloth at the same time.

Bar tack – A series (or bar) of closely spaced zig zag stitches used to reinforce the ends of buttonholes, pockets, flies, beltloops and other similar openings and punctures in clothing to prevent tearing.

Baste or basting – Tacking with long stitches to hold garment together for a first try on.

Bearing – A surface supporting a moving part.

Bed – Part of the sewing machine frame which serves as a sewing platform.

Belt loop – A loop of material or thread sewn into the waist.

Bias – The direction that is neither parallel to the warp nor to the filling in a fabric. True bias is midway between both directions (45° angle of fabric).

Bias binder – An attachment on machine to sew bias.

Bight – Width of a zig zag or overseaming stitch.

Binding – (a) The operation of attaching a tape or folded strip to the edge of a piece of material. (b) The tape or folded strip itself. (c) Excessive friction in a bearing which impedes the free movement of a part.

Blade – The long, slender section of a needle, extending from the shank to the eye.

Blindstitch – Special machine for invisible hemming of garments; hemmer.

Bobbin thread – Underthread drawn from bobbin to form lockstitch.

Bobbin winder – Device used on lockstitch machines to wind thread on bobbins automatically while machine is running.

Bodice – (a) Top part of a dress. (b) Fitted part of a dress that extends from the shoulder to the waist. (c) The section on a woman's dress.

Box pleat – Pleat made by alternating the direction of folds on the machine.

Braid – Woven band of fabric for edging garments, decorating uniforms, etc.

Brakes – Device for slowing or stopping the motion of a machine.

Buck – The padded and cloth covered part of a press on which garments are pressed.

Bundle – (a) To tie together in quantities. (b) A stack of cut material. (c) A quantity of partly or completely sewn items, tied or otherwise kept together as a unit.

Bundle system – Production system in which the bundle is a unit of work. The sewing machine operator procures the bundle from storage and returns it after completing the stitching. The sewing machine layout is random.

Burr – Rough spots on the tips or edges of needles, hooks or other thread handling parts.

Buttonhole – A cut in a garment for buttons.

Butt – The end of the needle opposite the point.

C. A. E. – The clearance above eye (or scarf) on a needle enables the point of the lower thread carrying device to approach as near as possible to the centerline to the needle without actual contact.

Center – Midpoint of anything.

Chainstitch (single thread) – A series of stitches formed by a single thread (carried by a needle) having the loop in each stitch drawn forward to be caught by the passage of the loop in the succeeding stitch. The succession of loops regularly formed beneath the material being sewn has the appearance of a chain. This stitch ravels easily and has extreme elasticity.

Chair – A seat.

Clip – A cut in a seam allowance which makes a curve lie flat and a corner turn.

Collar – Part of a garment that fits around the neck.

Cloth – Any woven material may be described as a cloth, but in the tailoring trade the word "cloth" is usually applied only to the principal or outside material of a garment.

Compensation foot – A special weighted foot for machine sewing.

Cone – A tapered spool for holding thread.

Crank – An offset device on a moving part used for transmitting motion.

Crotch – The place where legs fork from the human body.

Cuff – The folded-back part of the sleeve.

Curve – A bending without angles.

Cycle – A complete operation performed by an automatic or semi-automatic machine such as a buttonhole or a tack.

Darn – To mend a hole in torn fabric with interlacing stitches.

Dart – A stitched fold of fabric used for shaping over curves.

Direction – A guide for instruction.

Dispose – The motion of the operator in getting rid of a part after sewing is completed.

Dolly – A low flat platform on wheels or casters used to move heavy boxes or other items.

Ease – To fit in garment parts according to pattern.

Edgecutter – A thin side of a blade on a special machine.

Elastic – Fabric whose threads are interwoven with strands of rubber.

Embroidery – A design in needlework or fabric.

Envelope – A folded paper container for paper, etc.

Eye – A hole in the needle for the passage of thread.

Eyelet – Small metal rings to hold thread.

Fabric – Woven or knitted cloth.

Face side – Side of the fabric intended to be shown when worn.

Facing – Part of material cut by pattern applied to the edge of a garment.

Feed – To move the material from one stitch position to the next; also refers to the mechanism which does the moving.

Feed dog – The flat-toothed plate of the lower feeding mechanism that grips and moves the material; is located under the presser foot.

Fewer – A small number; not many.

Filling – Yarns that are woven crosswise to the warp in the fabric.

Flap – A shaped piece of material which provides a covering for the mouth of a pocket or for ornamentation.

Fold – To bend over double.

Folders – Attachments which turn the edge of the material before sewing.

Fork (crotch or crutch) – The point at which the legs join on a pair of trousers.

Front – That side of the machine which faces the operator during sewing.

Garment – An article of clothing.

Gathers – One or two rows of hand or machine stitching drawn up to form even fullness.

Gathering (ruffling or shirring) – Produced by feeding the material under the needle faster than it is carried away from the needle.

Gauge – A measure or a guide.

Grain – The direction of the warp of the fabric.

Grainline – An indication on cloth to straight direction of woven mark.

Groove – Cut-in areas along the blade of a needle in which the thread rides during needle penetration. The thread is inserted in the eye of the needle from the "long-grooved" side.

Guide – A measurement to follow; a gauge.

Gussett – A triangular piece of fabric inserted in a garment to strengthen or enlarge the garment.

Handwheel – Part of machine that raises the needle.

Head – The entire sewing machine, not including the table, stand, motor, or any accessories or attachments.

Heel – That part of the presser foot farthest away from the oncoming material.

Hemline – A folded edge turned and sewed.

Hemmer – An attachment which folds the material so that the raw edge is turned under to form a hem.

Hook – A rotary device carrying the bobbin case which engages the thread loop on lockstitch machines to produce a lockstitch.

Horizontal arm – That portion of the machine arm which supports the sewing head and houses the arm shaft.

Inch – Measurement of length equalling 1/12 of a foot.

Instructions – Information given or taught; a lesson.

Interlining – A layer of material inserted in certain parts of the garment between the inner and outer fabric for shape retention, strength, warmth or bulk.

Inverted pleats – Same as box pleat.

Jean – Material used for greater strength and resistance to abrasion.

Knee lifter – Part of a machine that raises the presser foot and releases the pressure on tension.

Knife pleats – Pleats in which material is folded over and stitched into a seam. The folds are in one general direction and the pleat is sewn down flat.

Lay – Predetermined plies of material spread out on a cutting table. Identical parts are cut simultaneously.

Latch – Part of bobbin case that locks in bobbin.

Left – Opposite of right.

Lengthwise – Measurement from end to end.

Lever – Bar or rod hinged on an axis for transmitting force or motion.

Line system – A method of production in which the article is the unit of work. The sewing machines are arranged in groups according to the sequence of operations. The articles are passed along singly from operator to operator.

Linkage – Part of machine connecting motor to treadle.

Lining – Inside covering.

Lint – Fabric fibers or particles.

Lock – Top and bottom threads which interlock to form a joint.

Lockstitch – Stitch formed by a needle thread and a bobbin thread, joined by a lock as described above. Also refers to the type of machine making this form of stitch.

Long groove – Protective channel on the needle for the thread which is drawn from the take up.

Loopers – Part of machine that holds the thread-like needles for making overcasting stitches.

Machine – A mechanical structure consisting of a framework and various fixed and moving parts for doing some kind of work such as sewing.

Making – All the sewing and pressing operations in the manufacturing of the stitched article.

Margin – Edge border.

Material – Cloth or other fabric.

Mechanic – Worker skilled in using tools or in making, operating, and repairing machines.

Medium – Term of measurement of the middle degree.

Middle – The center; between two given points.

Miter – A 45^{o} angle turn.

Narrow – Small in width; not wide.

Needle – Slender, pointed instrument, usually made of tempered steel, containing an eye to carry thread through a fabric for sewing.

Notches – V-shaped symbols on patterns used as fitting guides in garments; also used to clip in curved seams.

Overedge stitch – A chainstitch or a lockstitch in which one or more of the threads are looped over the edge of the fabric. It is primarily used to prevent raveling of the fabric edge.

Pattern – Guide or design from which to work; used in making garments.

Perforation – A hole or mark on patterns as a guide to follow.

Pin cushion – A holder for pins and needles.

Pinking – Zig zag edge cutting of material to prevent raveling or fraying.

Pinking shears – Shears with notched blades used for pinking the edge of cloth, etc.

Piping – A narrow bias tape used in binding.

Placket – A slit at the top of a skirt to make it easy to put on and take off; usually with a zipper.

Pleat – Fold of material sewn into a seam.

Pliers – Tool used as pinchers for grip handling small objects, cutting wire, etc.

Ply – (a) The number of thicknesses of cloth in a lay or a seam. (b) The number of strands in a twisted cord, thread, or yarn.

Point – The penetrating end of a needle.

Presser bar – A device which holds the presser at its lower end, exerting enough pressure to hold the material down on the sewing platform.

Presser foot – Part of a machine that holds the material against the feeding surface during stitching.

Pressure – Pressing force applied against an opposing body; to give weight to.

Puckering – A slight gathering of the material during stitching due to excessive tension, thread elasticity, or other factors.

Quality – Degree of excellence or perfection.

Quantity – An amount or number; a portion.

Regulator – Part of machine that controls tension on threads.

Reinforce – To backstitch at the beginning and end of a seam.

Retainer – That which holds or retains.

Reverse – To turn in opposite direction.

Revolutions – Complete cycle of a turn; rotation.

Right – Opposite of left; correct.

Running yard – Lengthwise measurement of material.

Scallop – Specially made curved seam for decorative trim.

Scarf – Area on the needle around the eye; indented so the sewing hook or looper can come as close as possible to the needle.

Seconds – Damaged finished articles which cannot be repaired; the damage mars the appearance or reduces the useful life of the article.

Screwdriver – A tool for loosening or tightening screws.

Seam – The result of joining two pieces of fabric together.

Seam allowance – The fabric between seamline and raw edges.

Seam ripper – A small pointed tool used for taking out seams and removing stitches.

Separate – To divide equally; to take apart.

Selvage – Finished woven lengthwise edge of each side of fabric.

Serging – Sewing the edge of a single ply of material to prevent the edge fraying. Same as overedging.

Serger – A special machine for overcasting seam edges.

Sew – To work upon with a needle and thread so as to mend or fasten together two or more plies of material.

Shank – End section of the needle that is inserted into the needle bar.

Shears – A large pair of scissors; a cutting instrument.

Sheer – Very thin fabric that can be seen through.

Shirt – A loose garment with sleeves worn on top part of the body.

Shoe – Part of a presser foot which comes in contact with the material.

Shoulder – Portion of a needle where the cross section of the shank blends into that of the needle blade.

Shuttle – Part of machine that locks the stitches; same as bobbin case.

Single – One, alone.

Size – An established measurement.

Skirt – A woman's garment worn below the waist.

Slack – Loose.

Slash – To cut.

Snips – A cutting instrument for trimming.

Spreading – Laying cloth back and forth by hand or by machine on a cutting table.

Straight – Without bend or turn.

Subassembly – Part of the garment which is made separately as a unit before it is joined to the main garment. For example, a top collar, under collar and interfacing would be made into a subassembly as a complete collar before being joined to the garment.

Supplies – Items needed for work.

Suspender – Part of a garment that holds.

Swatch – A sample piece of fabric.

Switch – A device to break an electric current or transfer it to another conductor.

Tack – To fasten with stitches.

Take-up lever – Lever with a thread eyelet on one end and hinged at the other; it controls and pulls up the slack in the thread and locks the stitch.

Tension – The degree of tautness in thread, cloth, or spring metal part.

Tension spring – The spring which exerts an adjustable degree of tension on the thread.

Thimble – A metal cover to protect the end of a finger in sewing.

Thread – A spun fiber for sewing; a very thin cord.

Thread count – The number of threads per square inch of woven fabric.

Thread plate – Part of machine that covers the feed dog.

Ticket – A numbered paper marker attached to each component part of an article to make sure that proper components are assembled together.

Timing – The adjustment of moving parts in a sewing machine so that they will coordinate properly.

Top thread – All threads which feed into the eye of a needle.

Toe – Part of the presser foot which faces the oncoming material.

Transfer – To move from one place to another; to change.

Treadle – Part of machine where the feet are placed to start and stop the machine; used to control power and speed.

Trim – To cut away.

Trimming – Parts of an article other than the basic assembly added for decorative or finishing purposes.

Tuck – A fold of fabric.

Turning – Two pieces of material are seamed together and then turned inside out prior to pressing or topstitching.

Tweezers – A small pair of pinchers for picking up or handling small objects.

Underpress – To press the underside of an article during its construction for the purpose of opening seam and shaping. This makes subsequent sewing operations easier and improves the appearance of the finished article.

View – The pictured representative of a scene; to consider.

Warp – Yarns that run lengthwise in a fabric.

Welt – Turned-back edge of material which is left protruding to an opening, as a pocket.

Welting – A cord or a folded edge of a seam to strengthen it for decorative purposes.

Whipstitch – A narrow zig zag stitch performed by hand or machine; sometimes used in buttonhole stitching.

Width – Measurement from side to side.

Wrench – Tool used to turn or twist mechanical parts.

Wristband – Part of garment that encircles the wrist.

X-stitch – A button sewing pattern of stitches having the appearance of the letter X. It is frequently in four-hole buttons and is usually called "cross-stitch".

Yarn – Spun thread for weaving or knitting.

PROGRAM OBJECTIVES T1.1

INDUSTRIAL SEWING PROGRAM DESIGNED TO HELP STUDENT ATTAIN:

BASIC MANIPULATIVE SKILLS AND KNOWLEDGE REQUIRED FOR ENTRY INTO SEWING FIELD

AN UNDERSTANDING OF RESPONSIBILITIES OF A CITIZEN OF OUR DEMOCRACY

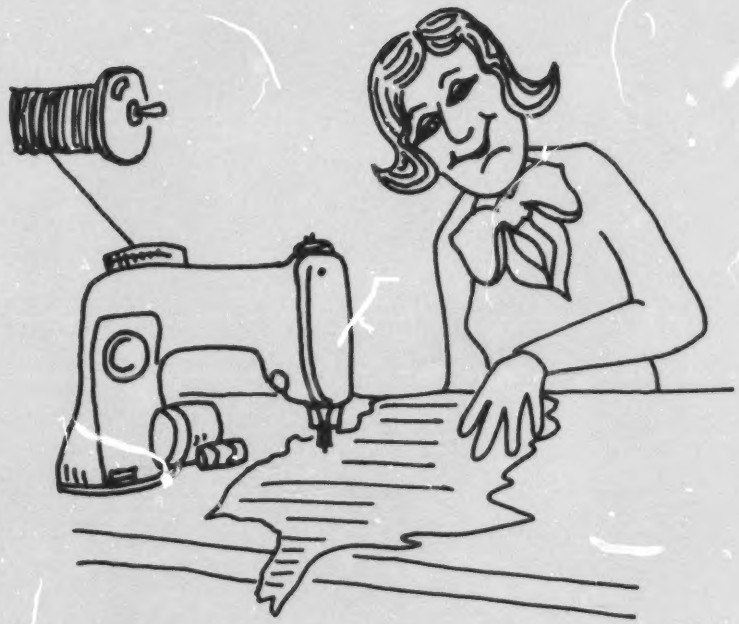
AN APPLICATION OF QUALITY WORKMANSHIP

SELF-CONFIDENCE AND DESIRABLE WORK HABITS

T1.1(a)

COMMUNICATIVE SKILLS-THE ABILITY TO LISTEN, TO UNDERSTAND, AND TO BE UNDERSTOOD

A KNOWLEDGE OF THE JOB, OPPORTUNITIES, FINDING AND KEEPING A JOB



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JOBS AVAILABLE

T1.2

JOBS AVAILABLE FOR SKILLED OPERATORS IN INDUSTRIAL SEWING:

SEWING MACHINE OPERATOR

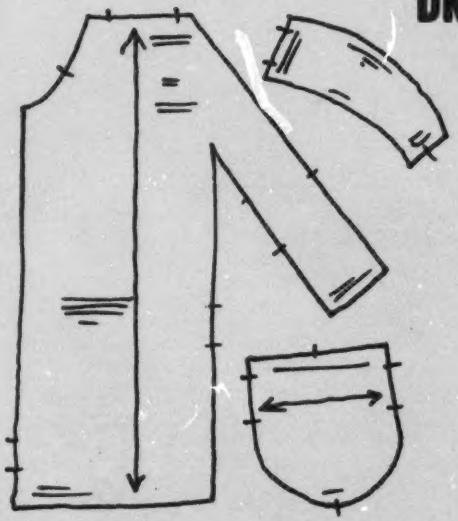
SEAMSTRESS

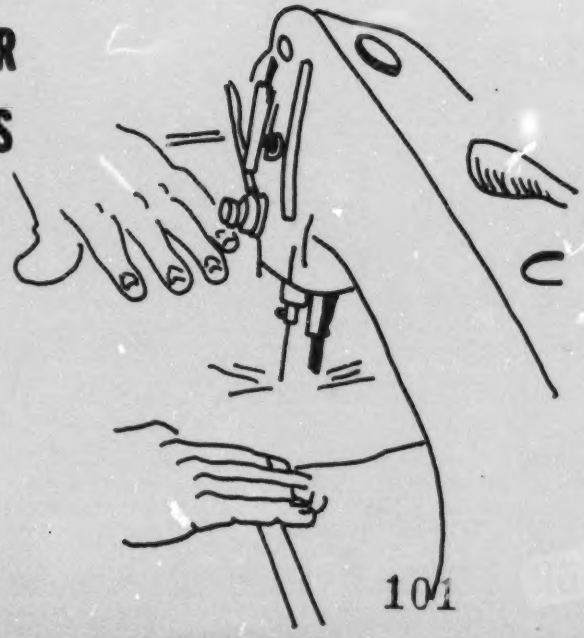
ALTERATIONIST

ALTERATION ASSISTANT

DRAPERY MAKER

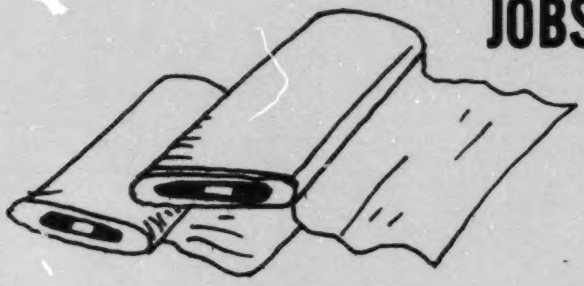
MENDER OR REPAIRER IN DRY CLEANERS





T1.3

JOBS RELATED TO INDUSTRIAL SEWING



SALESPERSON READY-TO-WEAR

BUYER READY-TO-WEAR

APPAREL SHOP SALES

HOME FURNISHINGS /INTERIOR DECORATOR

FABRIC SHOP SALES

TEXTILE PLANT

LAUNDRY/DRY CLEANING

FASHION DESIGN

INDUSTRIAL SEWING AS A CAREER T1.4

ADVANTAGES

WORK AS A SKILLED OPERATOR IN WELL PAYING JOB

MAKE OWN CLOTHING FOR FAMILY

REPAIR/RESTYLE CLOTHES

MAKE SIMPLE HOME FURNISHINGS

_____

_____

_____

_____

DISADVANTAGES

INSIDE WORK

PRODUCTION REQUIRED

REPETITIOUS

_____

_____

_____

_____

_____

FASHION

T2.1

106

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T2.2

HAND SEWING

T2.3

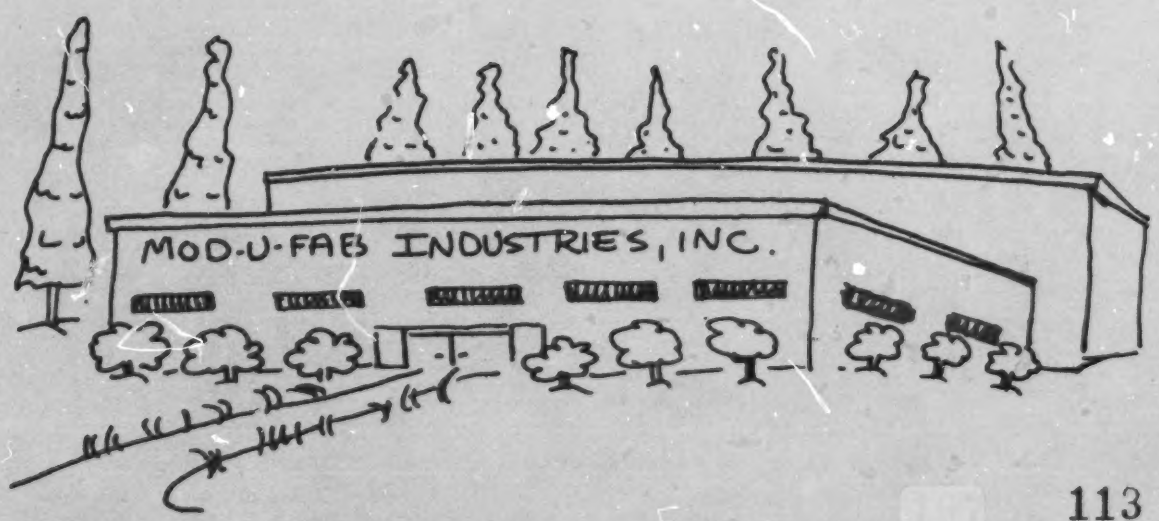
MASS PRODUCTION

T2.4

COLONIAL AMERICAN CLOTHIERS

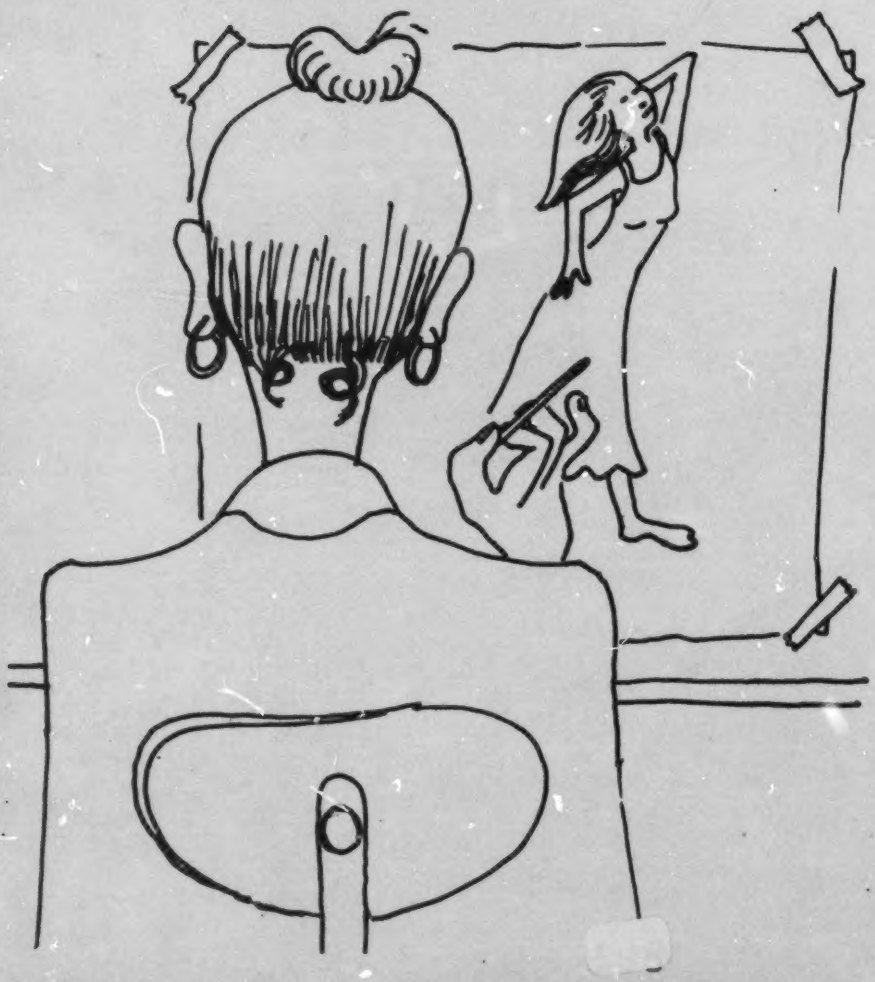
T2.5

CLOTHING INDUSTRY TODAY



T2.6

FASHION DESIGNER

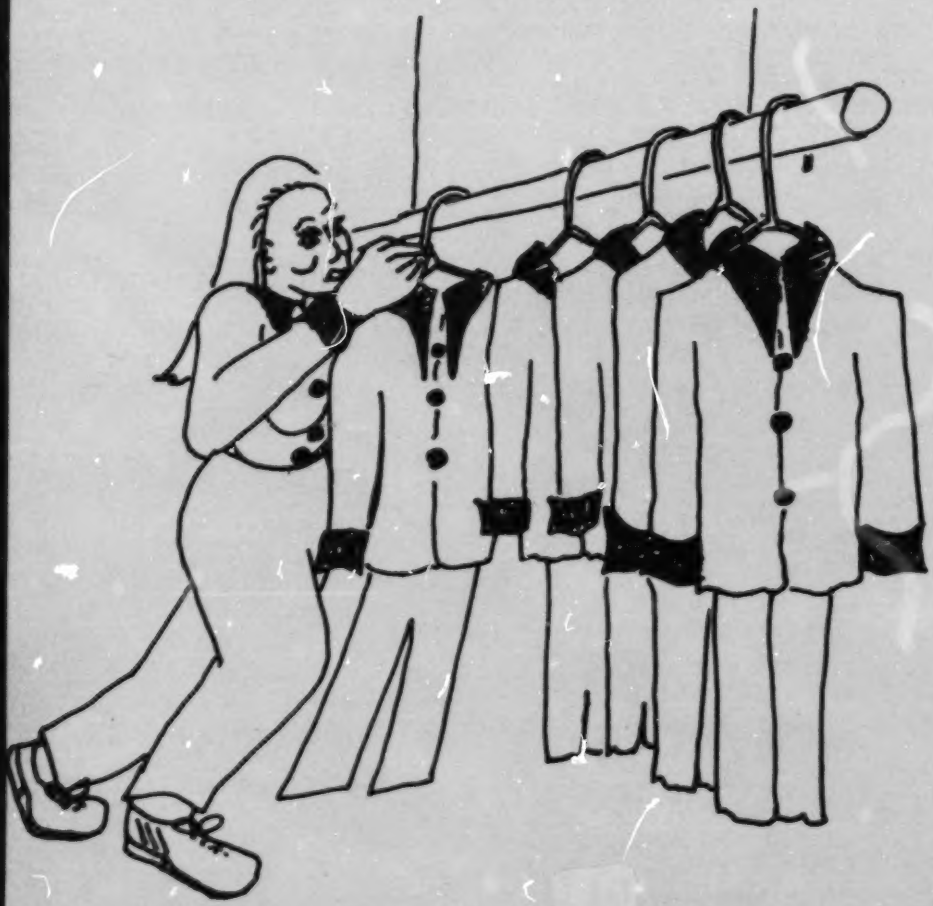


T2.7

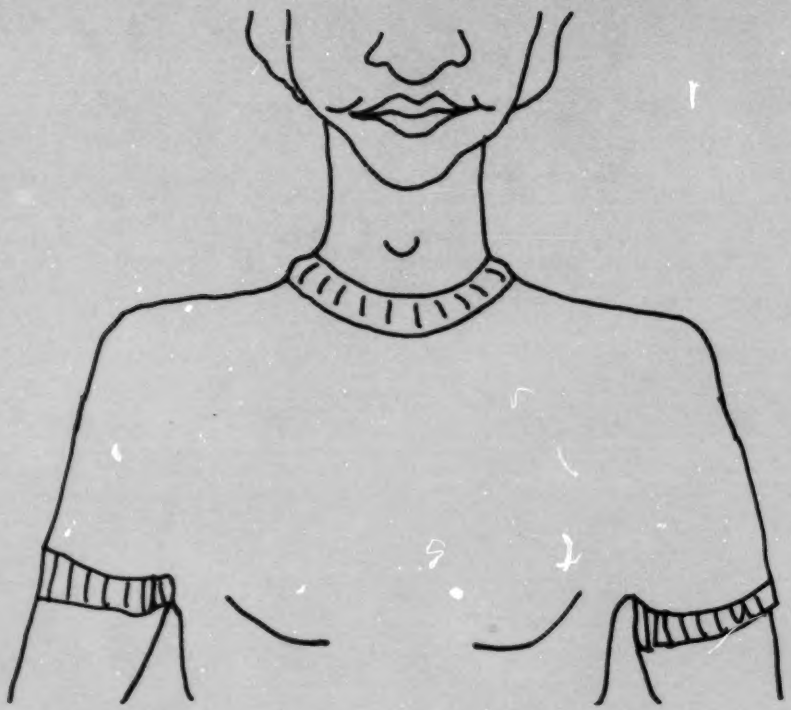
SEWING ARTIST

T2.8

QUALITY PRODUCTS REQUIRE MANY SKILLS

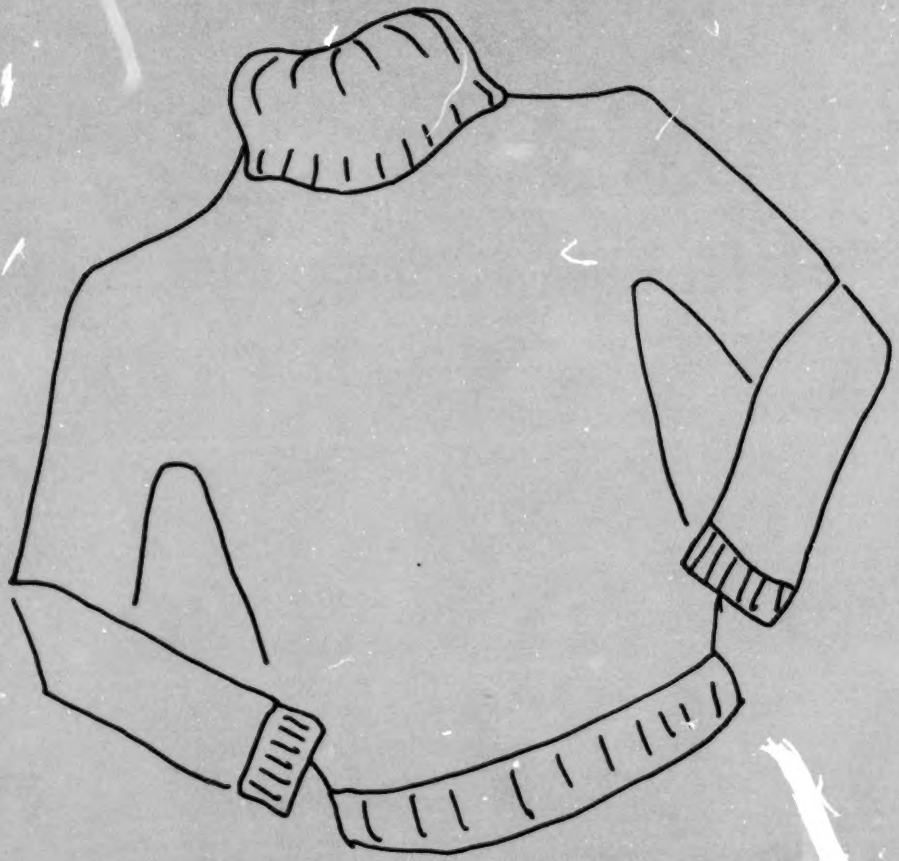


T2.9



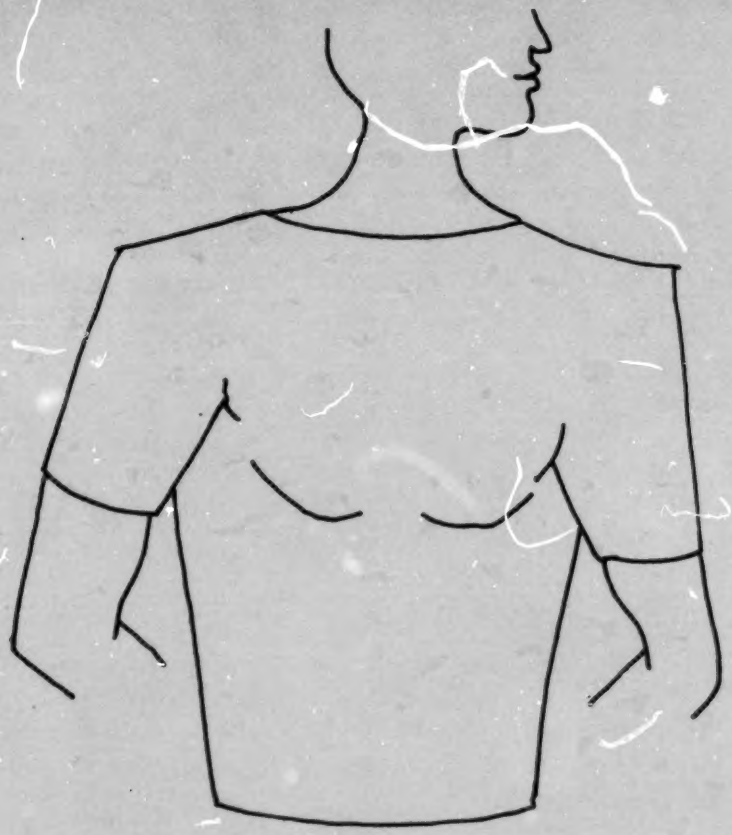
CREW NECK KNIT SHIRT

T2.10



TURTLE NECK KNIT SHIRT

T2.11

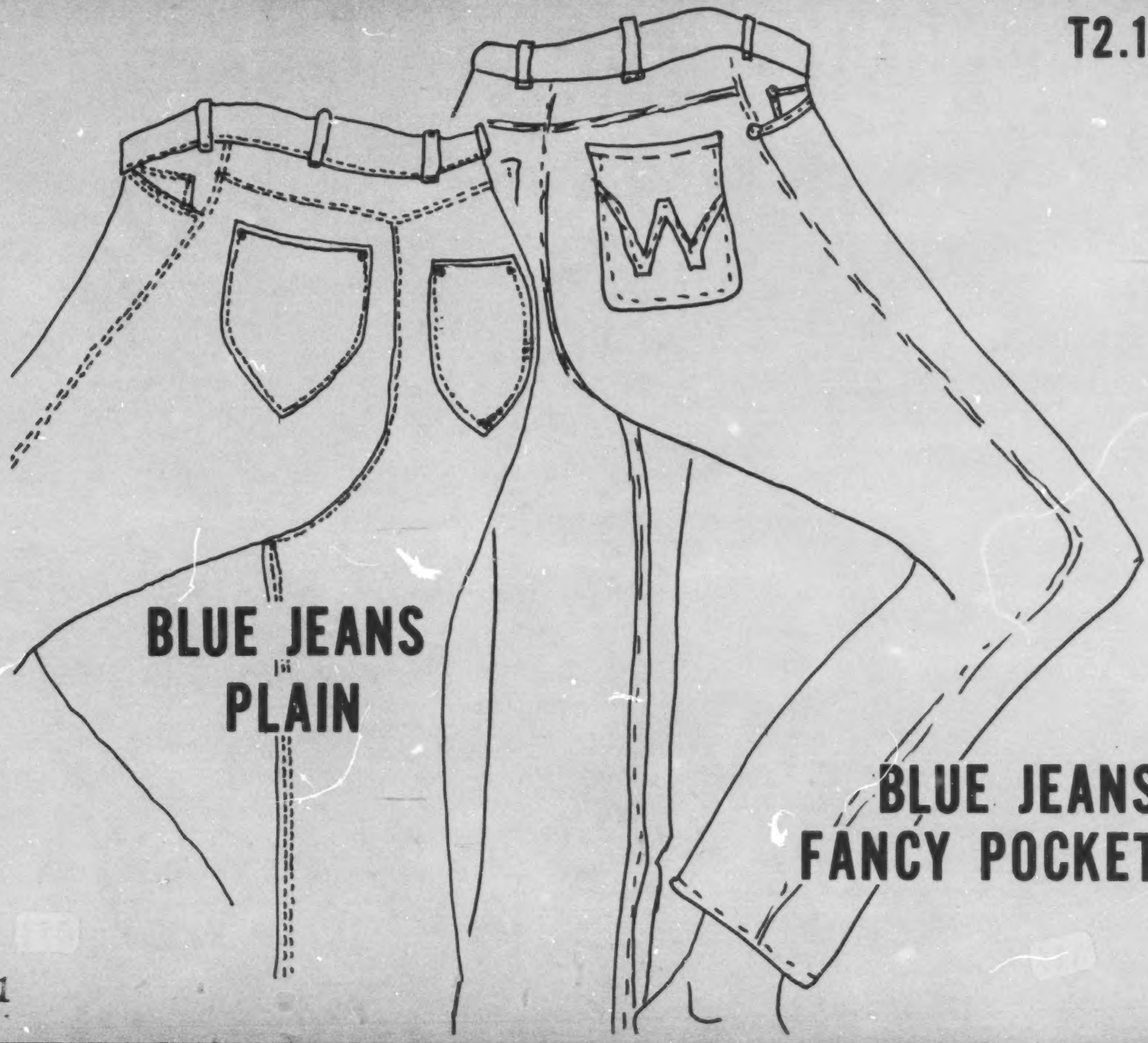


BOAT NECK KNIT SHIRT

T2.12

COLLAR NECK
KNIT SHIRT

T2.13



BLUE JEANS
PLAIN

BLUE JEANS
FANCY POCKETS

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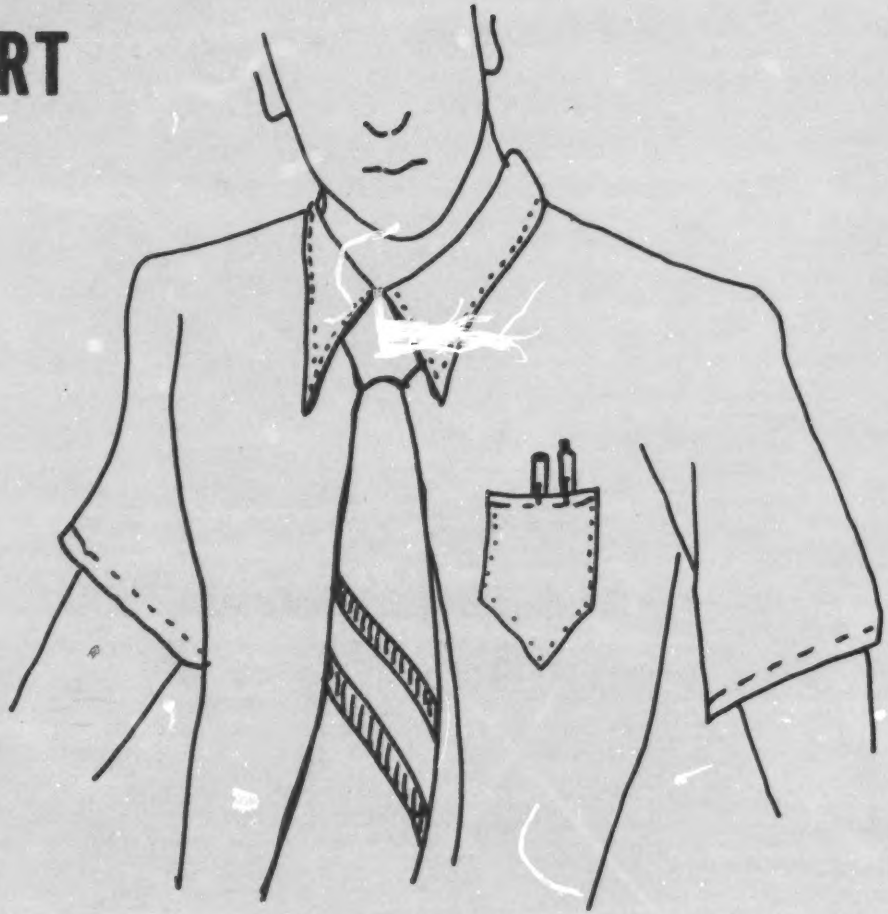
T2.14

BASIC SHIRT



T3.1

Bathe Daily

T3.2

Use Deodorant

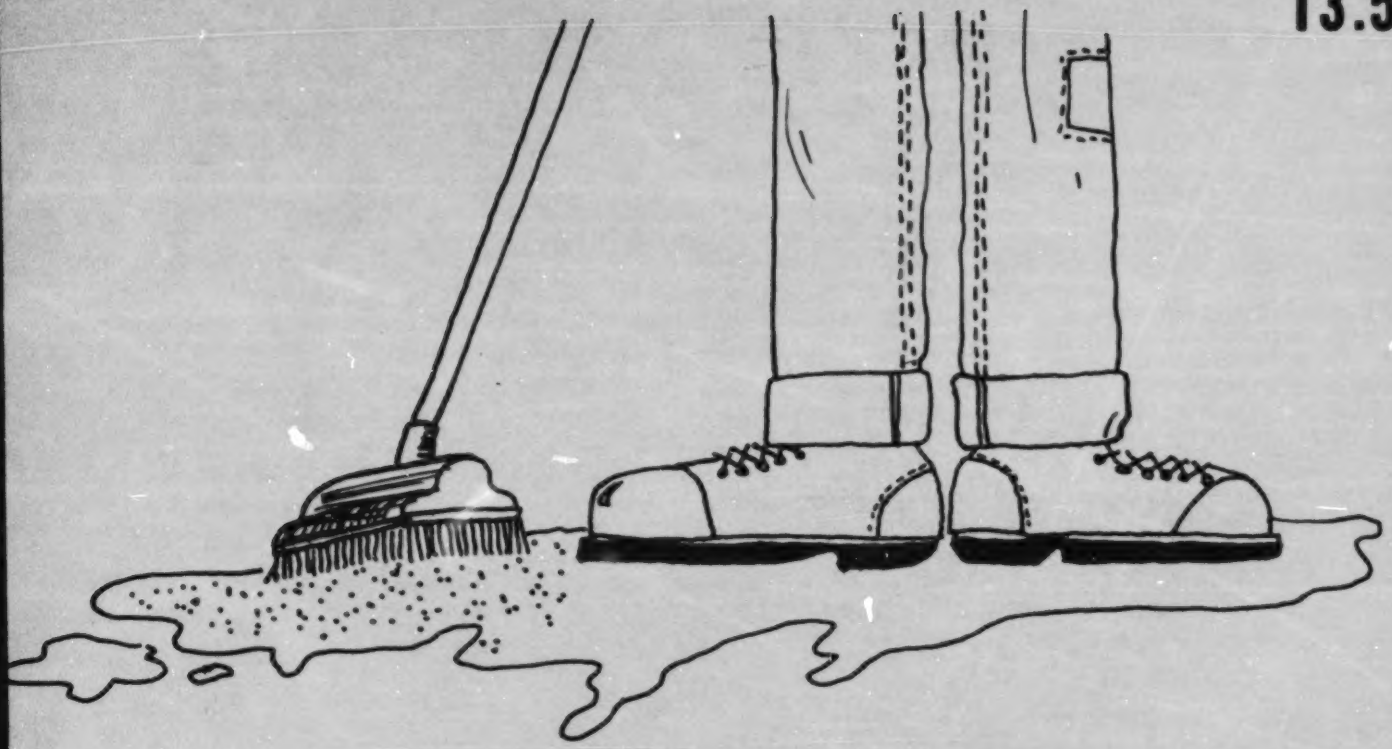
T3.3

Wear Clean Clothes

T3.4

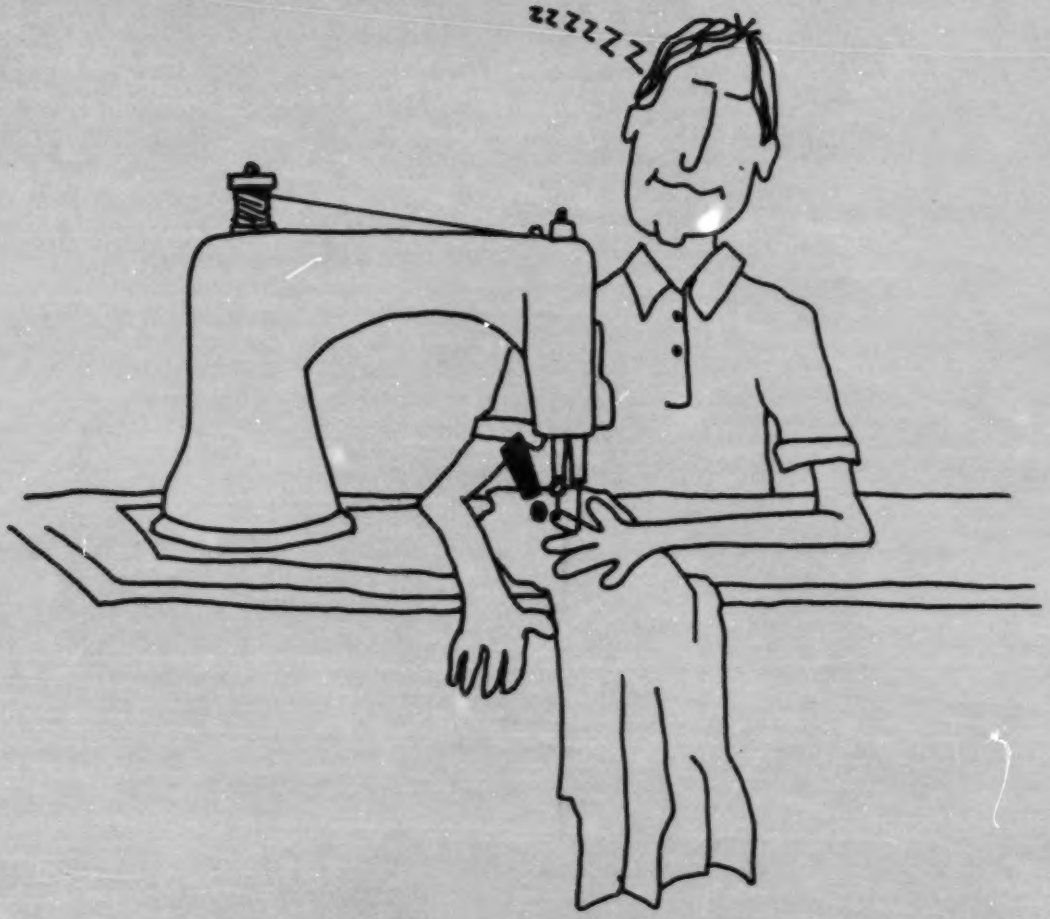
Well Groomed

T3.5



Clean Up Oil Spills At Once !

T 3.6



Be Alert While Operating Machine

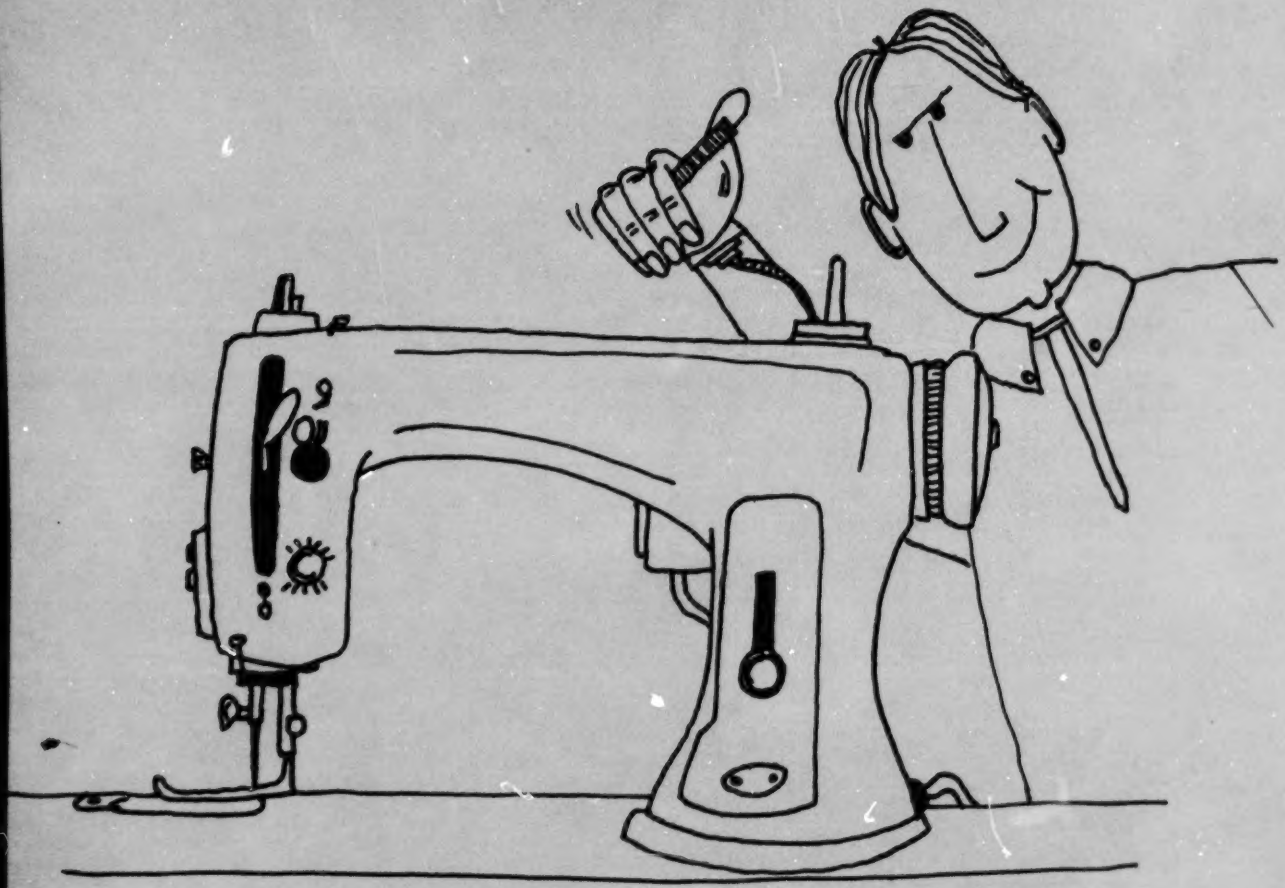
T3.7

Report Accidents

And Seek First Aid At Once

Keep Equipment

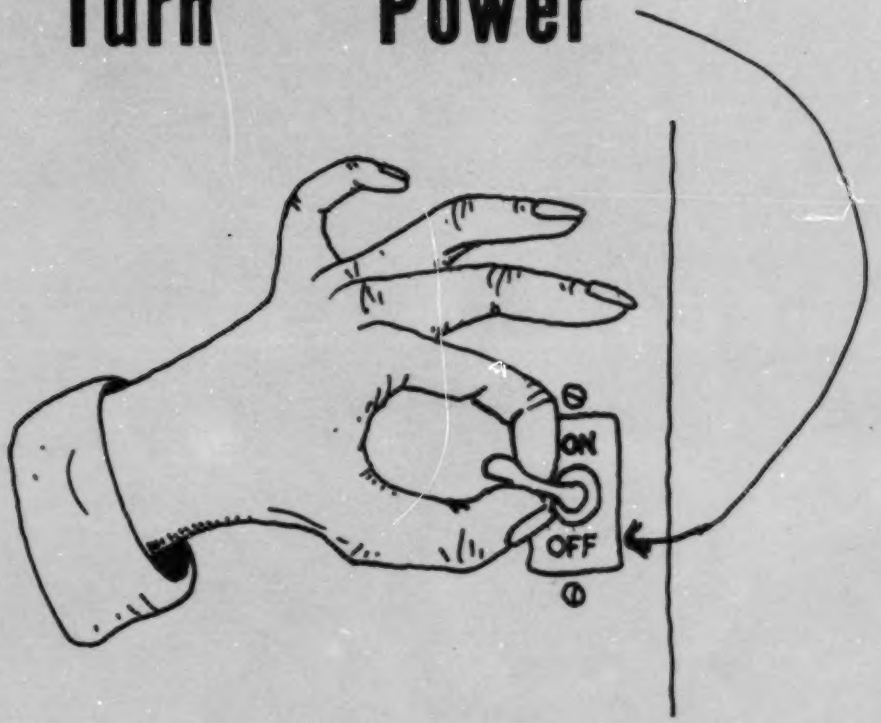
T3.8



In Proper Working Condition

T3.9

Turn Power



When Machine Is Not In Use

T3.10

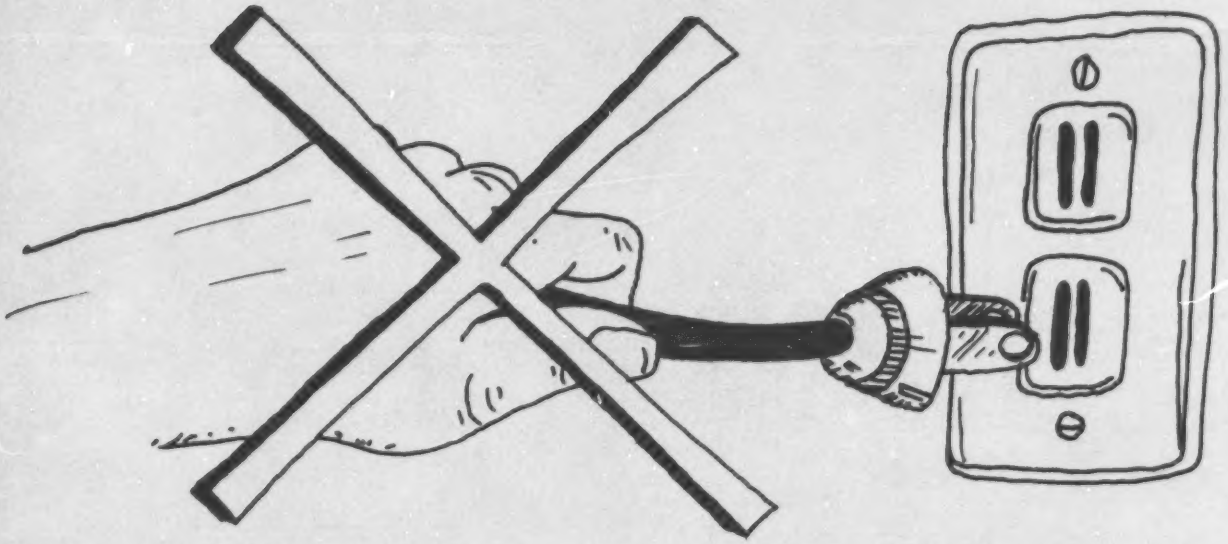
Learn Location Of Switches, Plugs Plug-Ins And Fuses

T3.11

Learn How To Turn Off Main Switch

T3.12

Hold Plug - Not Cord -



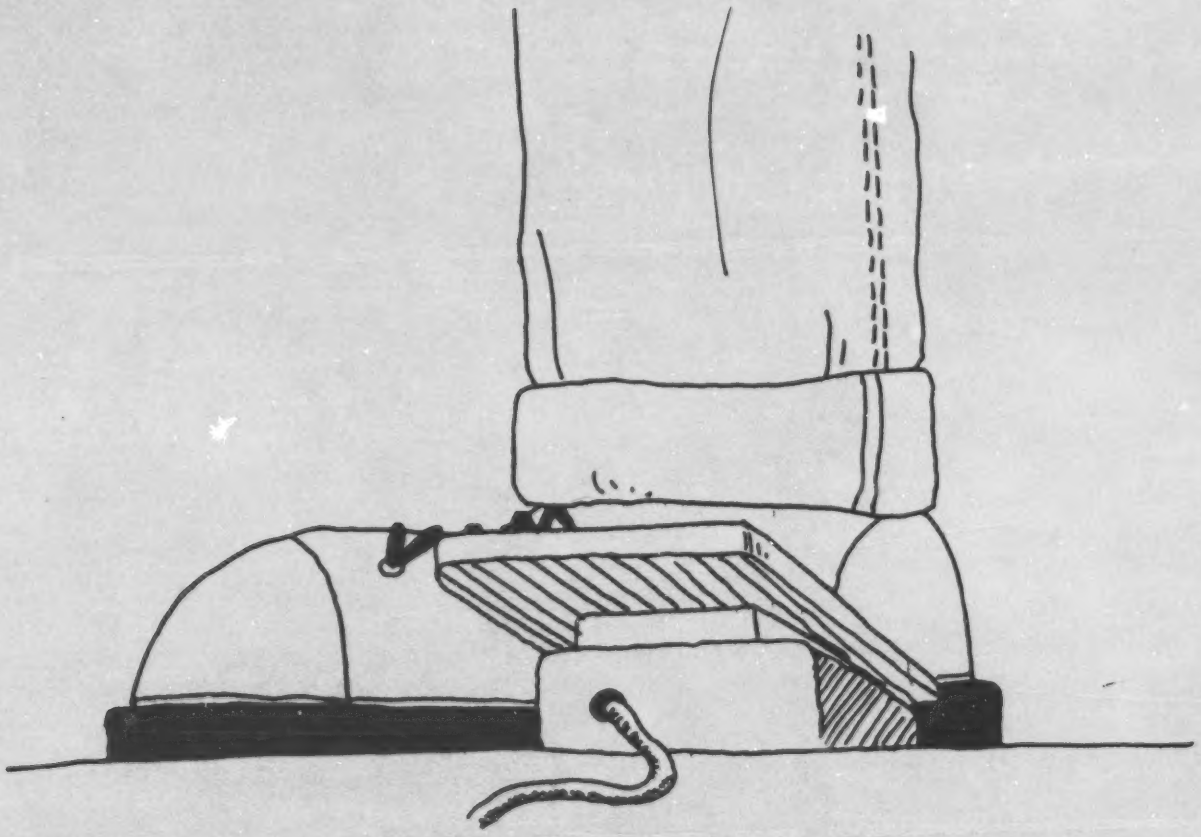
When Disconnecting

T3.13

Don't Be Careless

Be Cautious!

T3.14



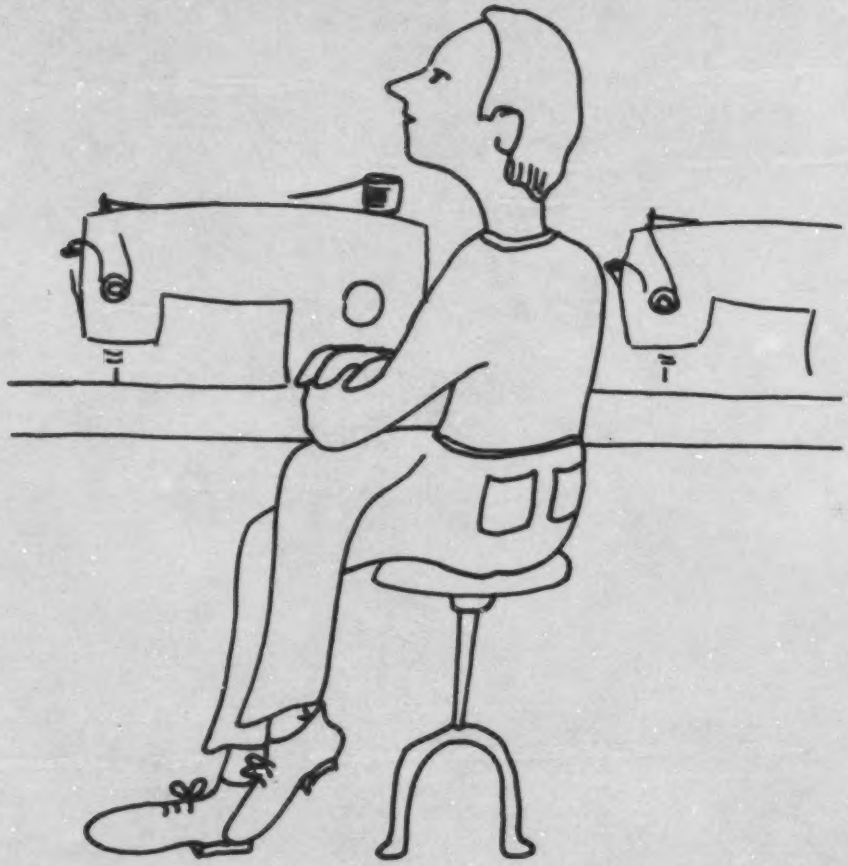
Keep Feet Off Treadle When Not In Use

T3.15

Do Not Run In Lab Or On The Job

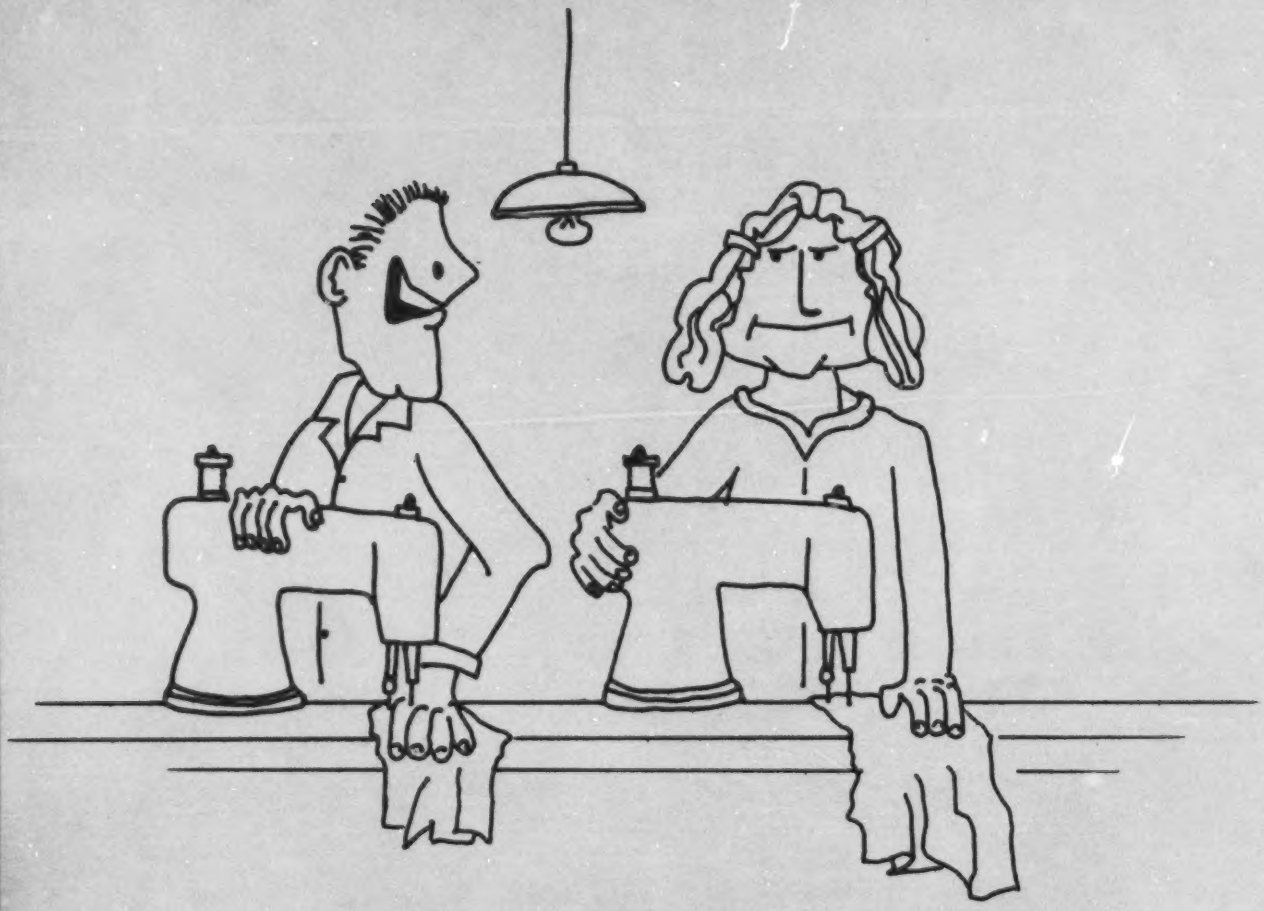
Keep Hands Off Machine

T3.16



T3.17

Don't Talk To Your Neighbor



When Operating Machine

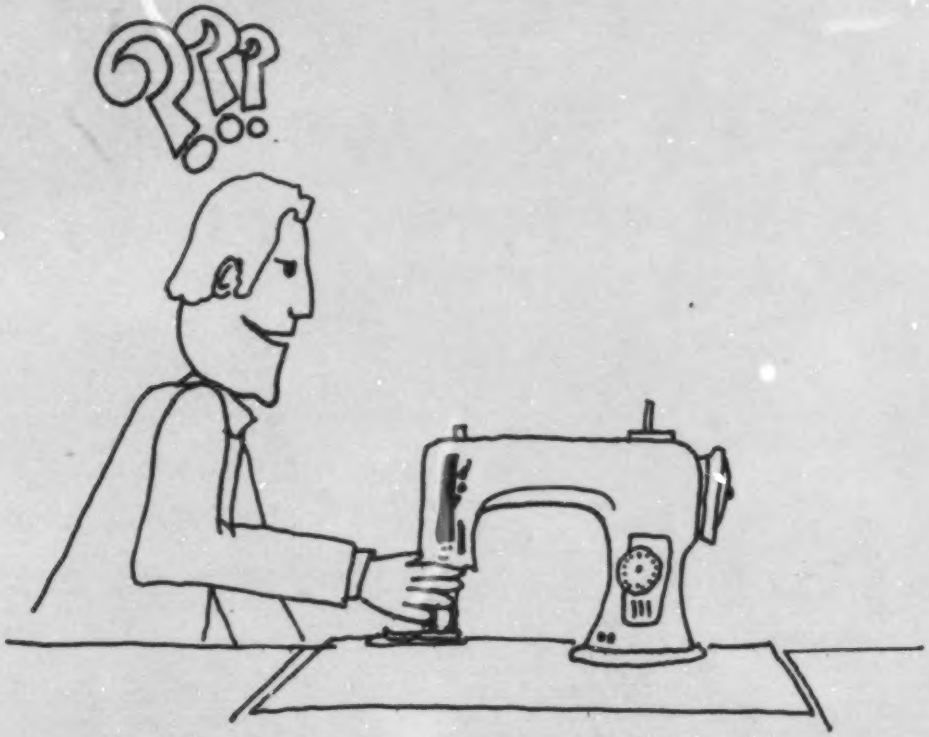
T3.18

Develop Correct Lifting

And Carrying Habits

T3.19

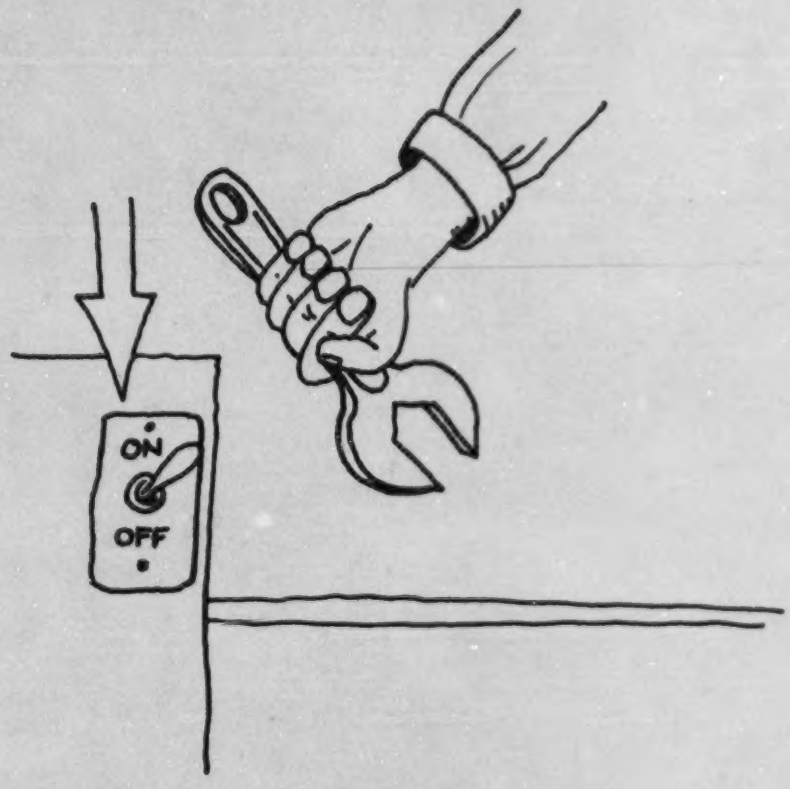
Do Not Attempt To Operate A Machine



With Which You Are Not Familiar

T3.20

Turn Off Power



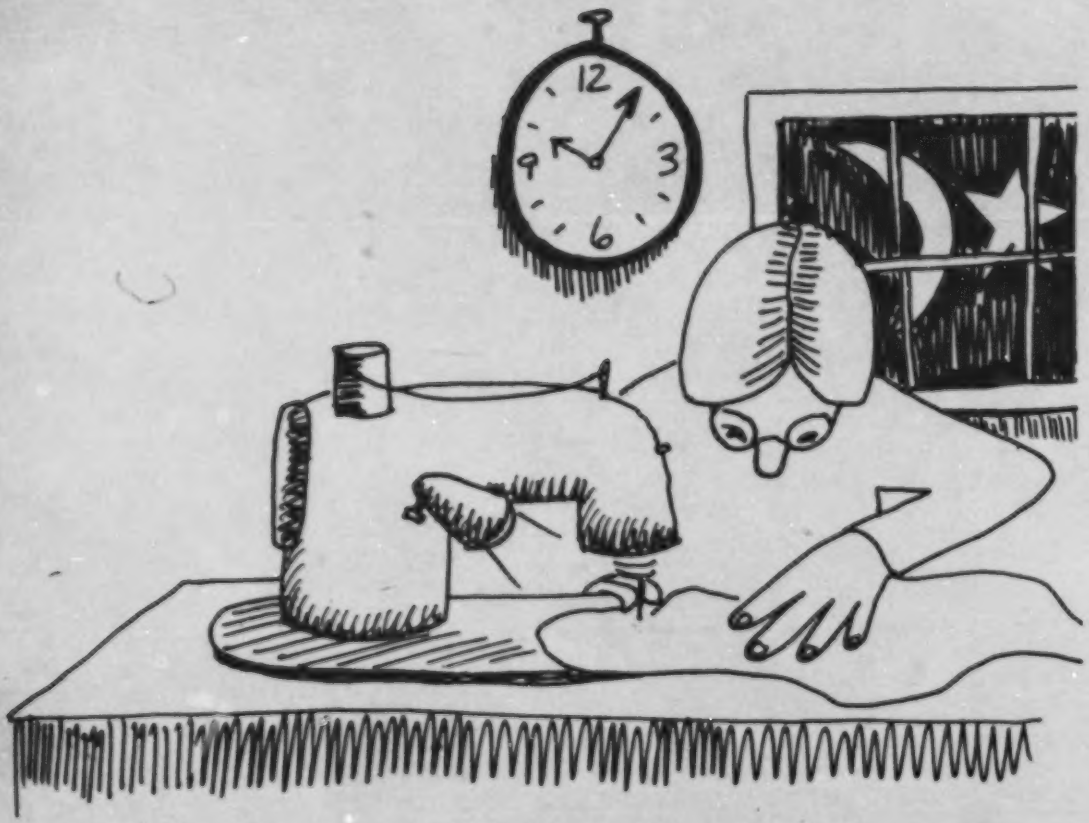
Before Adjusting Or Cleaning Machine

T3.21

Think Safety

T3.22

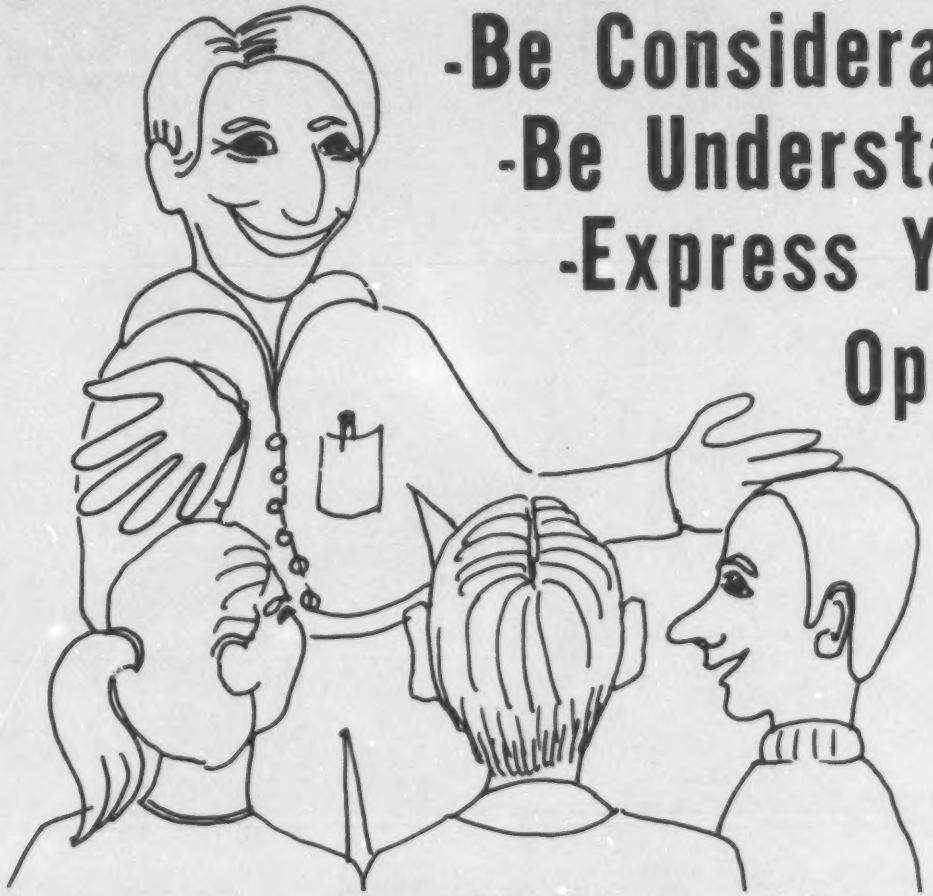
Accept Responsibility -



Stick To Job Until Completed

Develop Positive Relationships

T3.23



-Be Considerate

-Be Understanding

-Express Yourself Openly

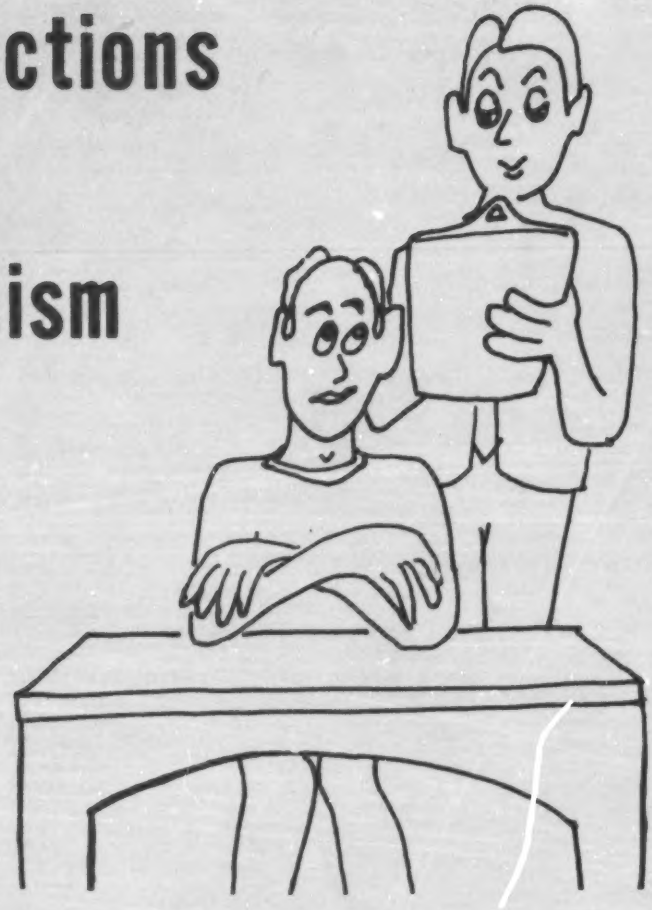
-Be Sensitive To Feelings Of Others

Be Flexible

T3.24

Follow Directions

Learn To Take Constructive Criticism



T3.25

Develop Sense Of Humor

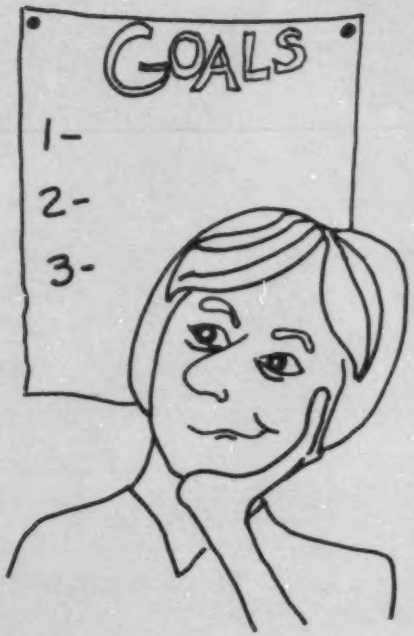
Properly Directed Toward Self And Others

T3.26

Set Goals -

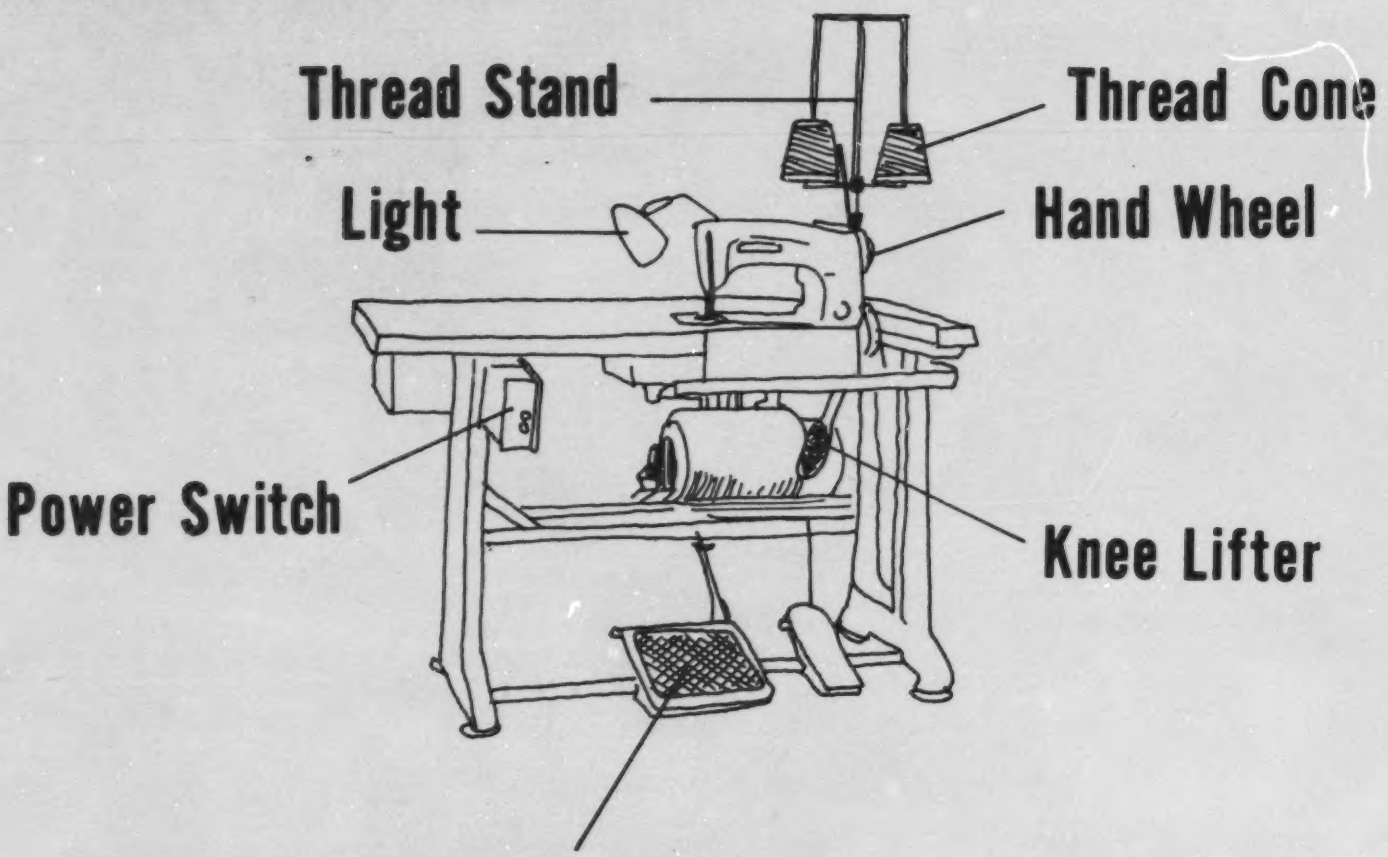
Work To Meet Goals

Think For Yourself



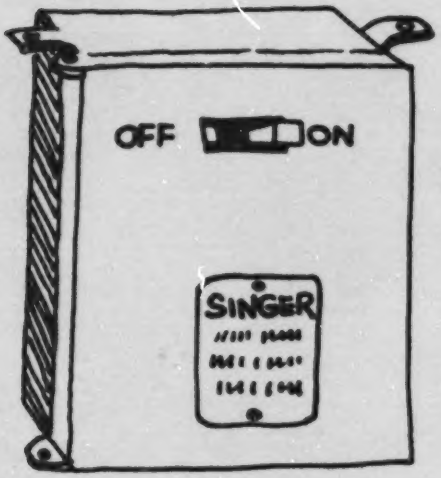
T4.1

BASIC INDUSTRIAL SEWING MACHINE



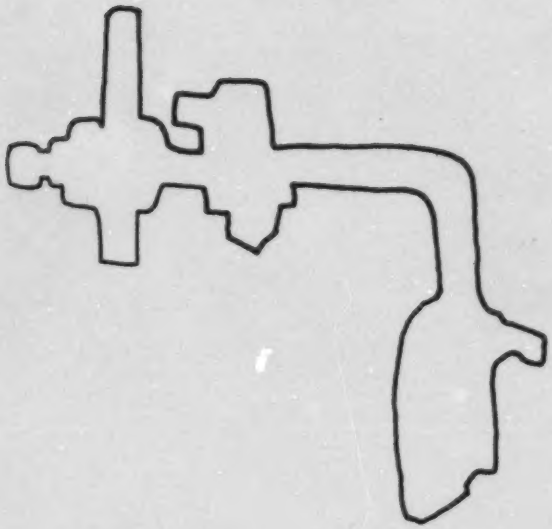
T4.2

SWITCH



T4.3

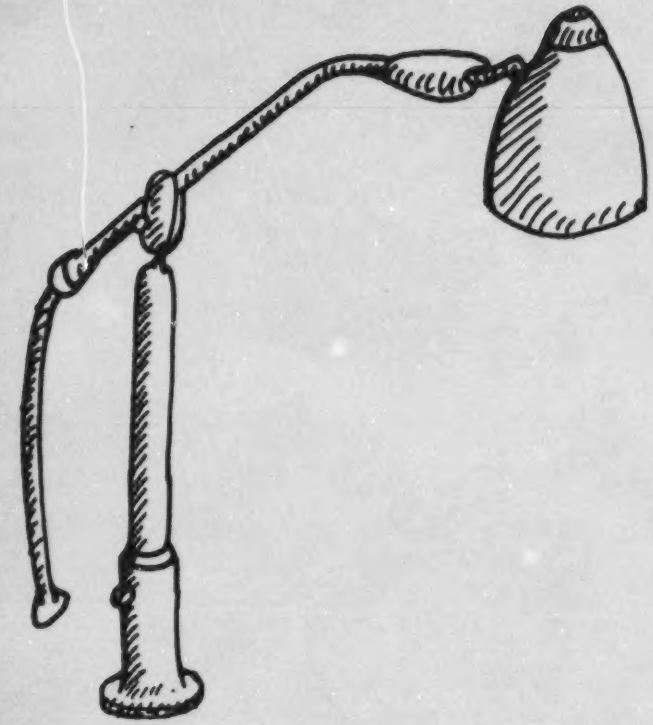
KNEE LIFTER



T4.4

TREADLE

T4.5



LAMP

T4.6

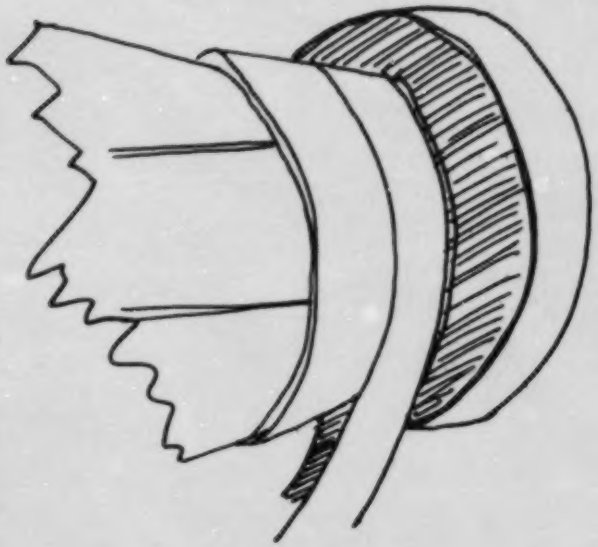
MOTOR

T4.7

THREAD STAND

T4.8

HAND WHEEL

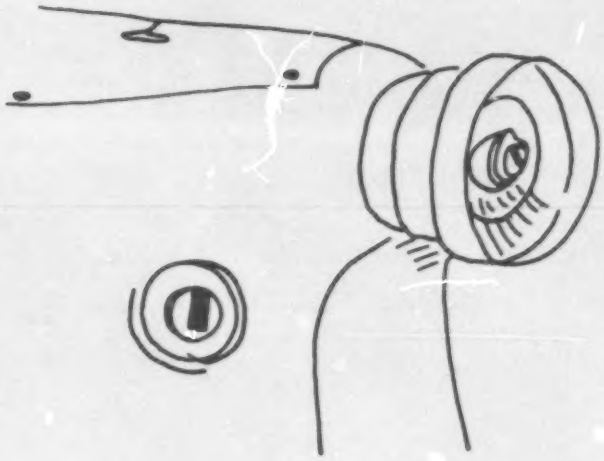


T4.9

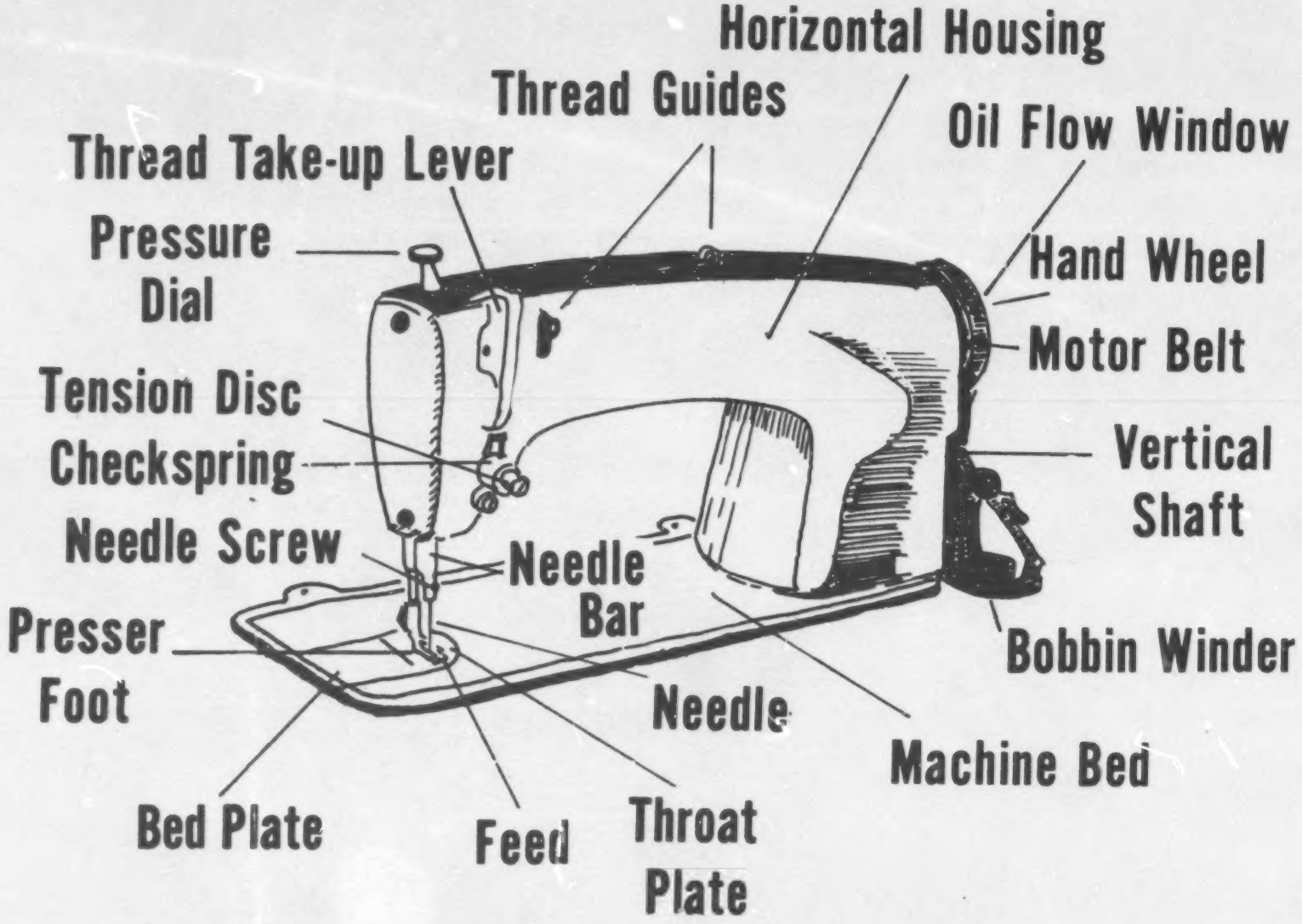
PRESSER FOOT

T4.10

OIL FLOW WINDOW



T4.11


Horizontal Housing
Thread Guides
Oil Flow Window
Thread Take-up Lever
Pressure Dial
Hand Wheel
Motor Belt
Tension Disc
Checkspring
Vertical Shaft
Needle Screw
Needle Bar
Presser Foot
Bobbin Winder
Needle
Machine Bed
Bed Plate
Feed
Throat Plate

Name

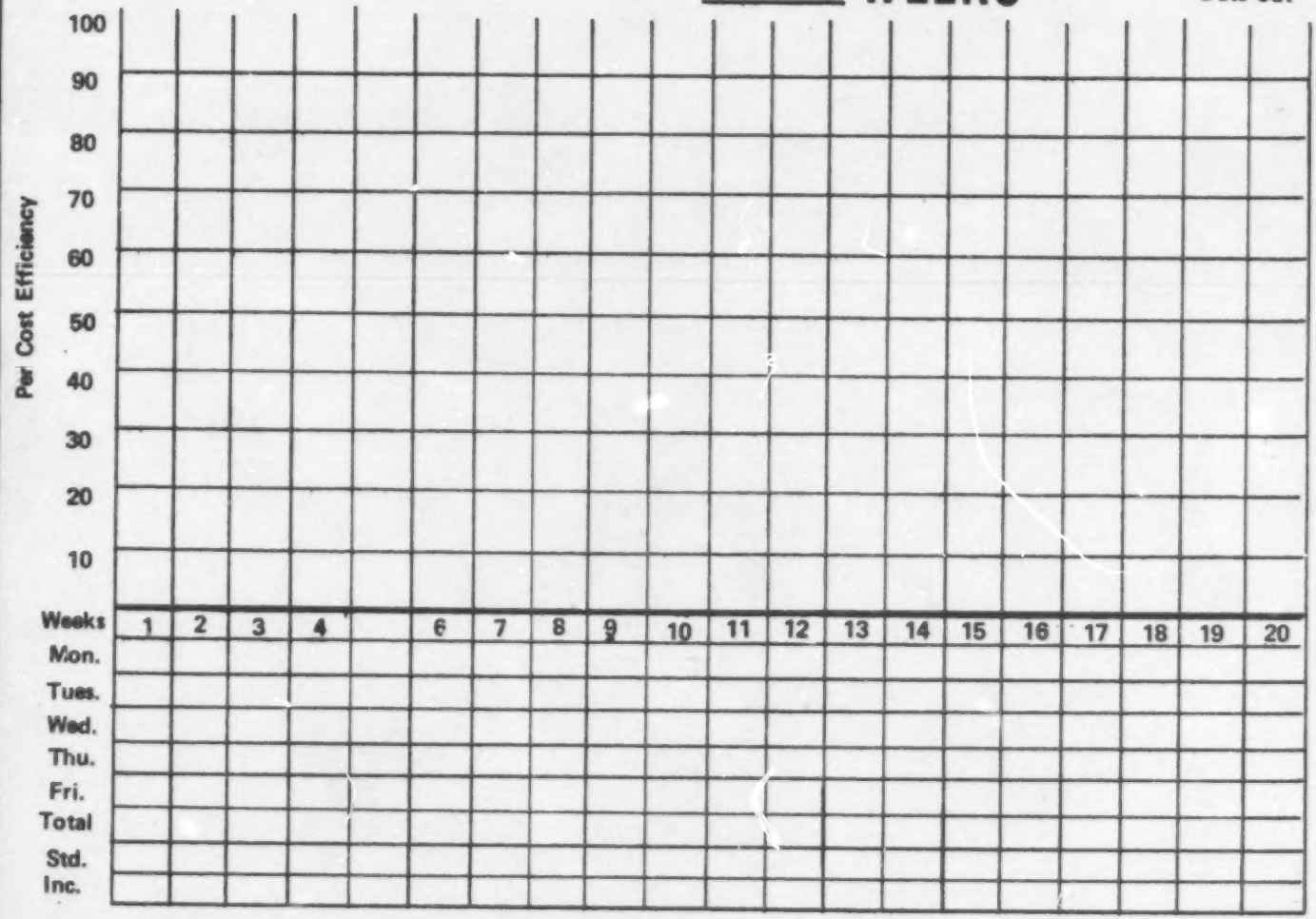
Operation

Date In

Date out

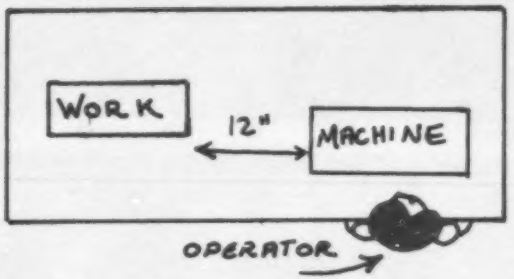
OPERATOR'S PROGRESS CHART

_____ WEEKS

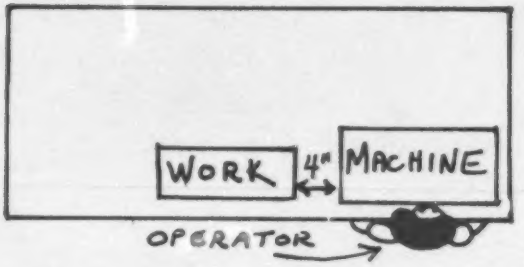


T5.1

STATION I

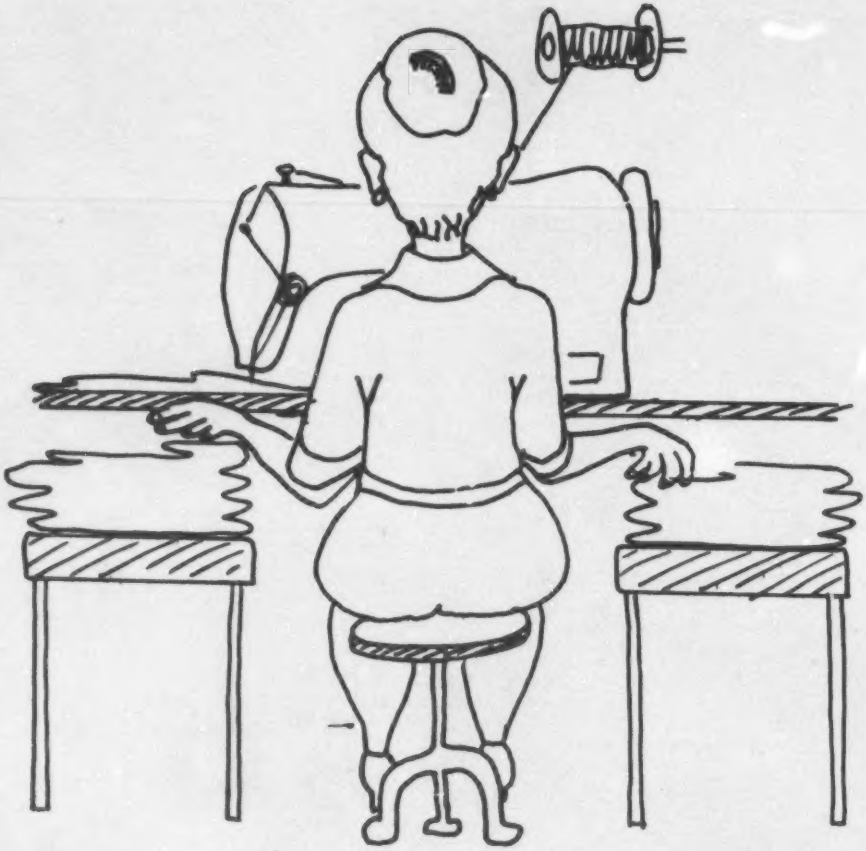


STATION II



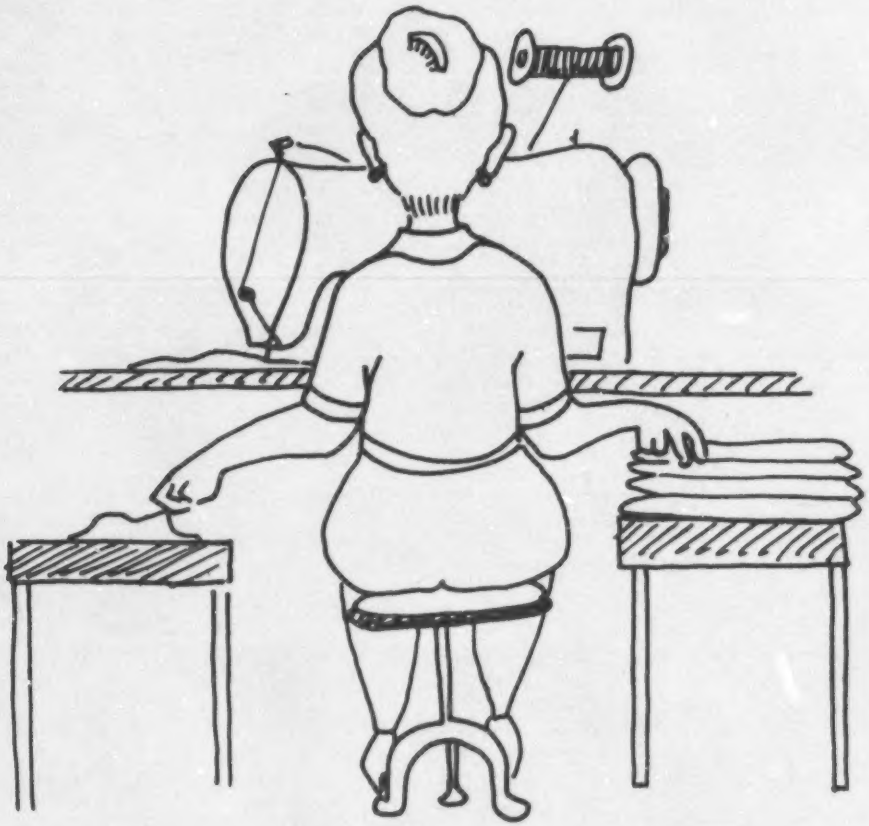
T5.3

SAME TIME PICK–UPS

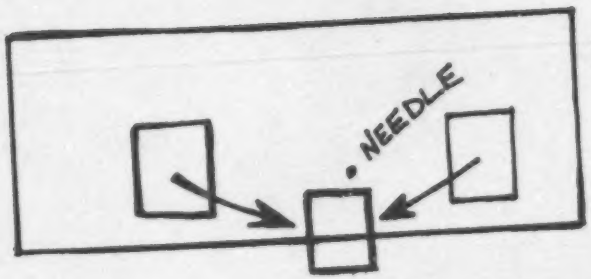


T5.4

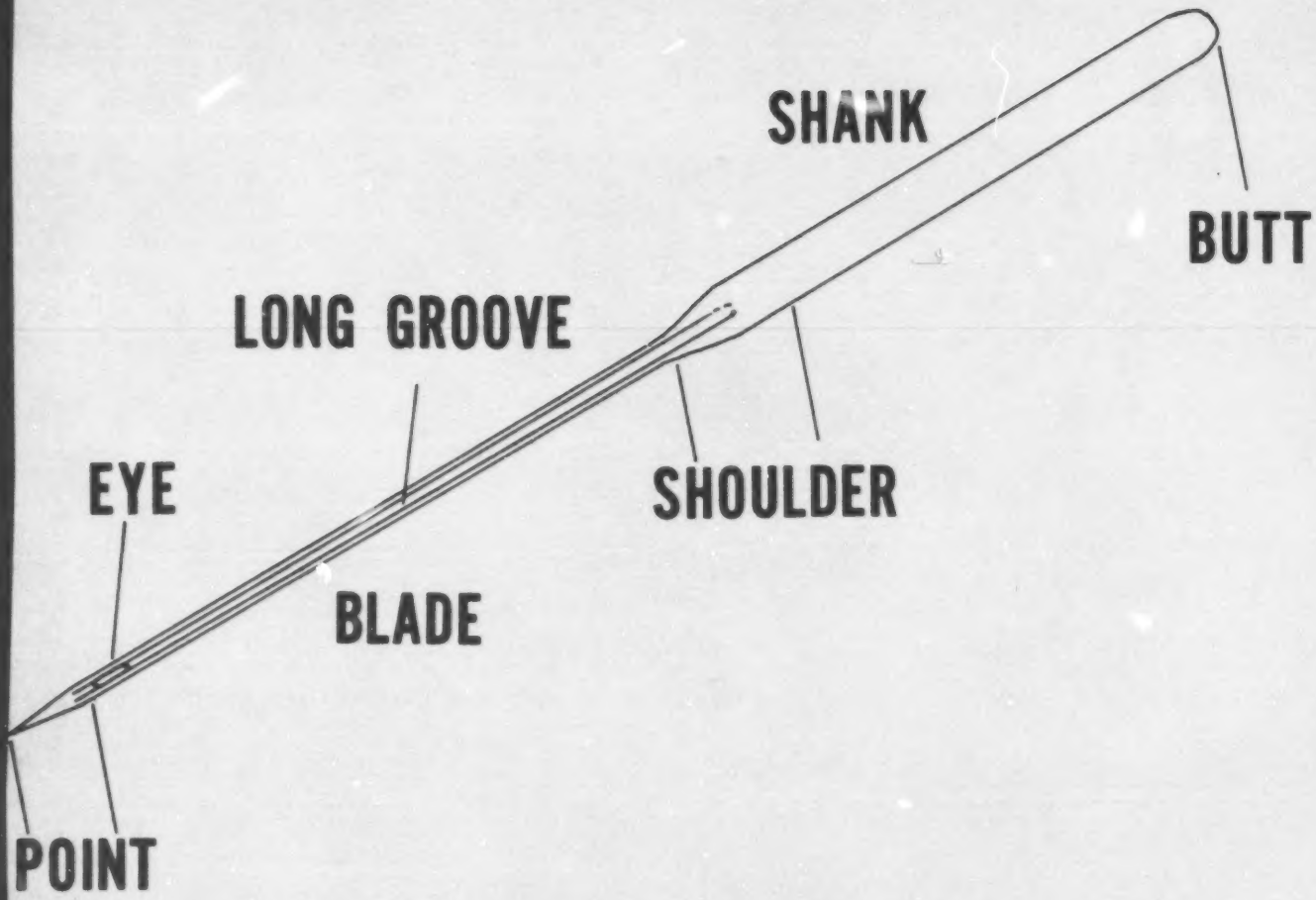
SAME TIME PICK–UP AND DISPOSAL



T5.5

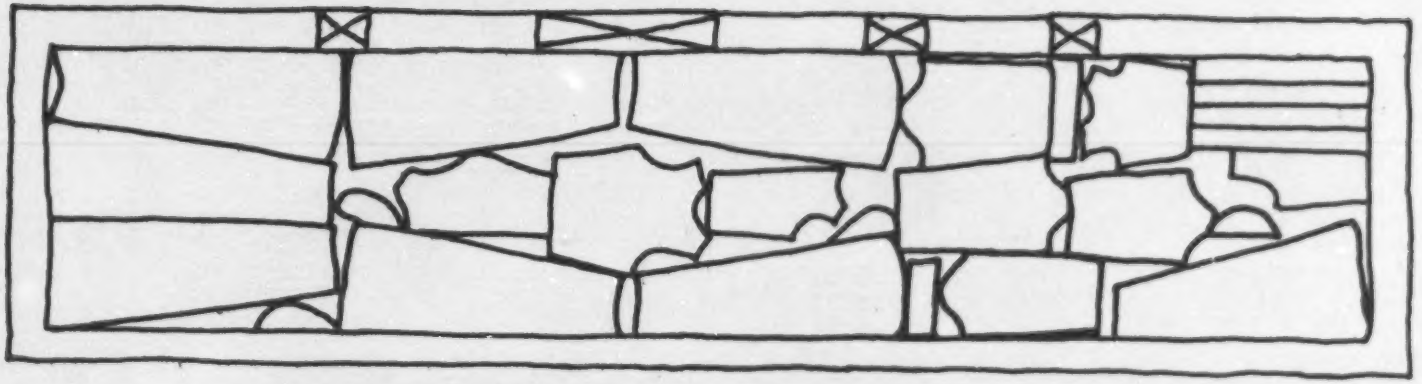


T 6.1



T9.1

GARMENT LAYOUT



T9.2

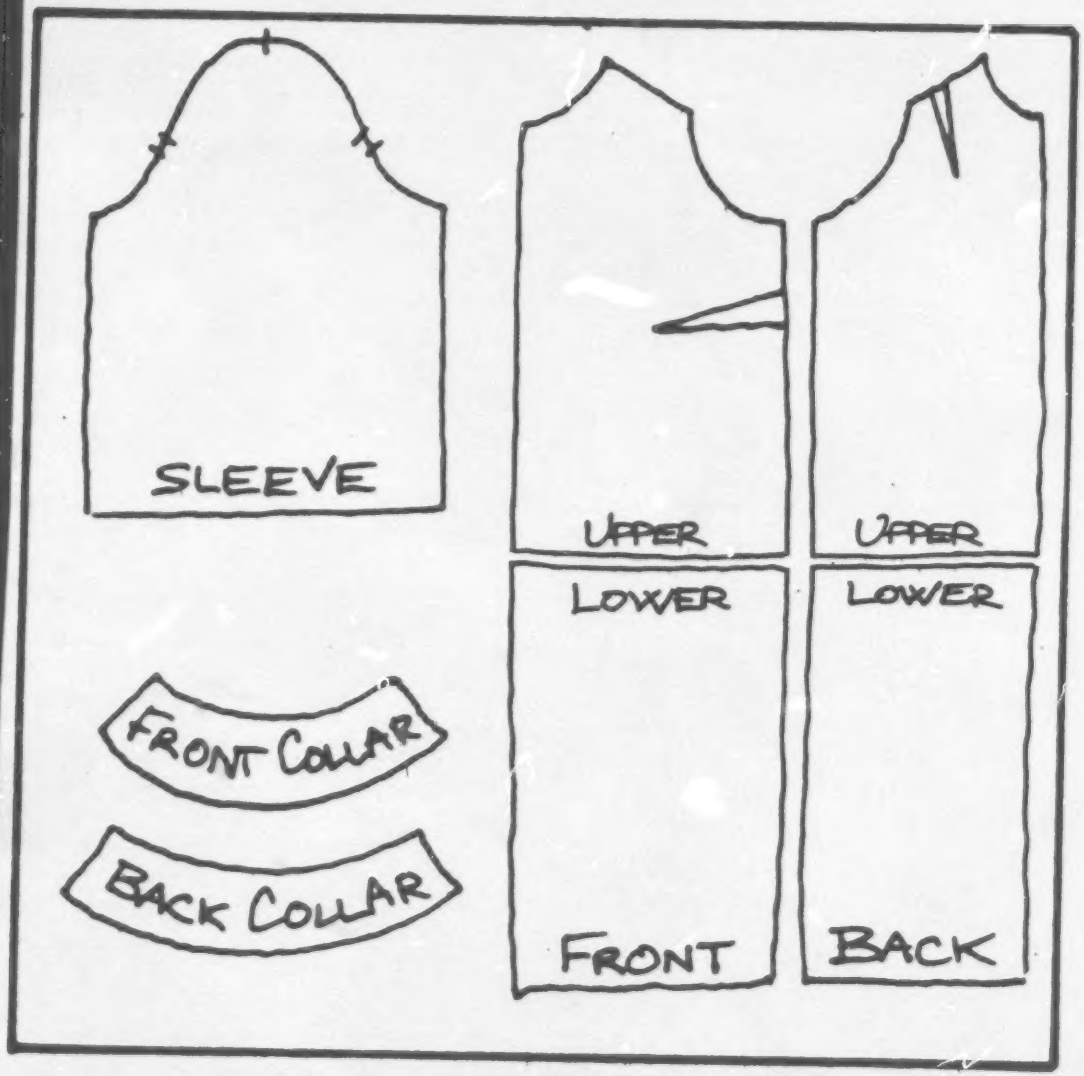
PATTERN MARKER

T9.3

CUTTER

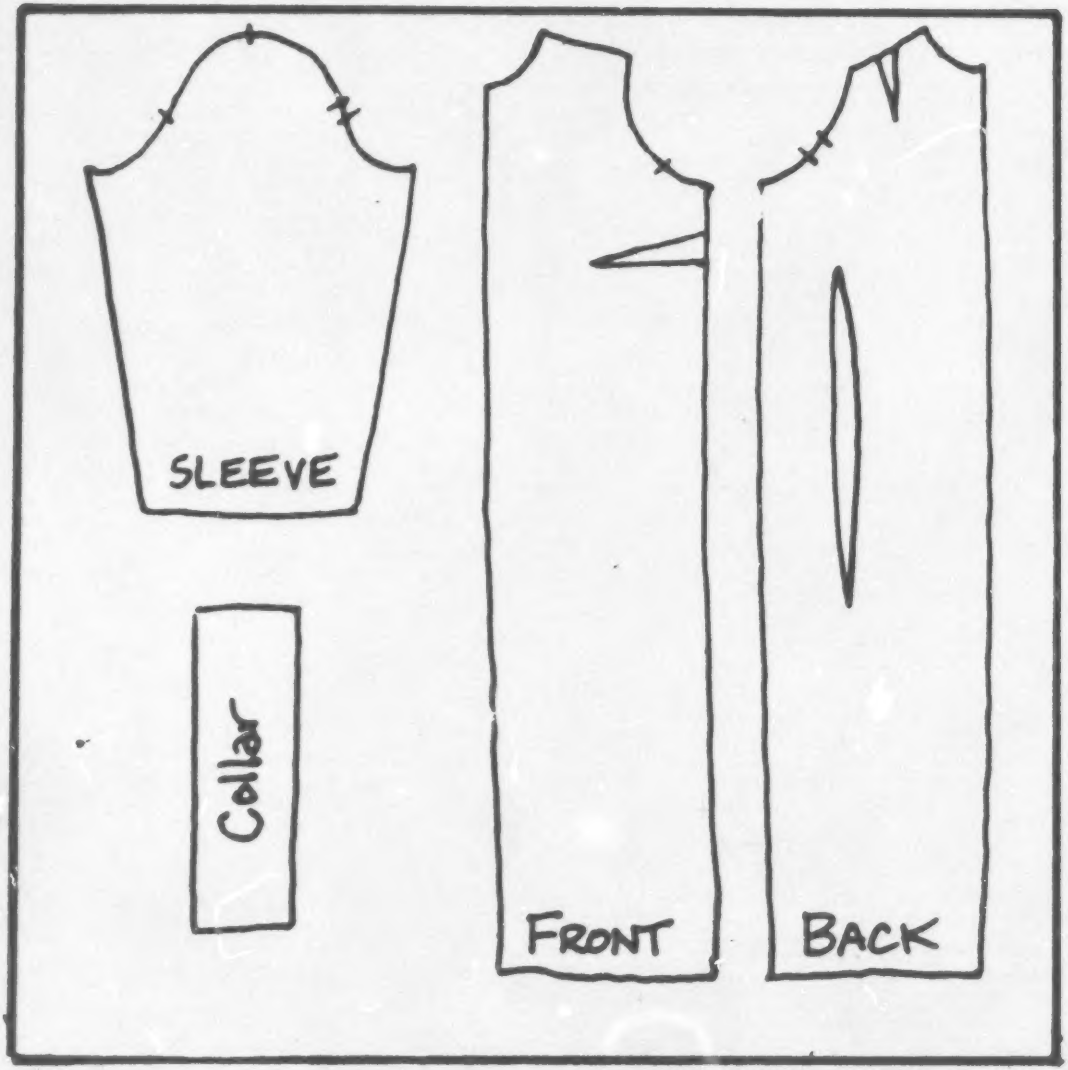
T9.4

FULL LENGTH DESIGN/JOINED AT WAIST



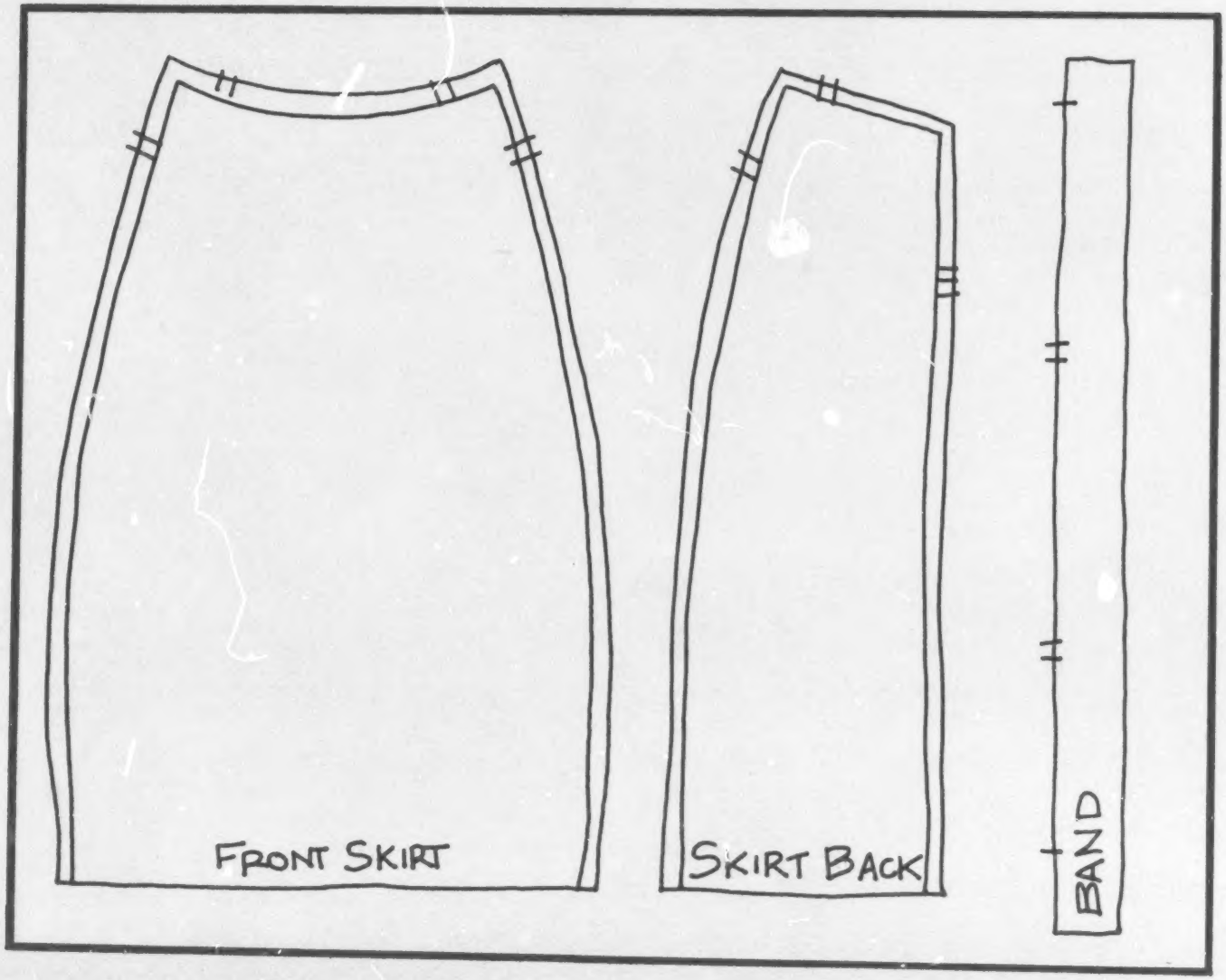
T9.5

ONE PIECE GARMENT



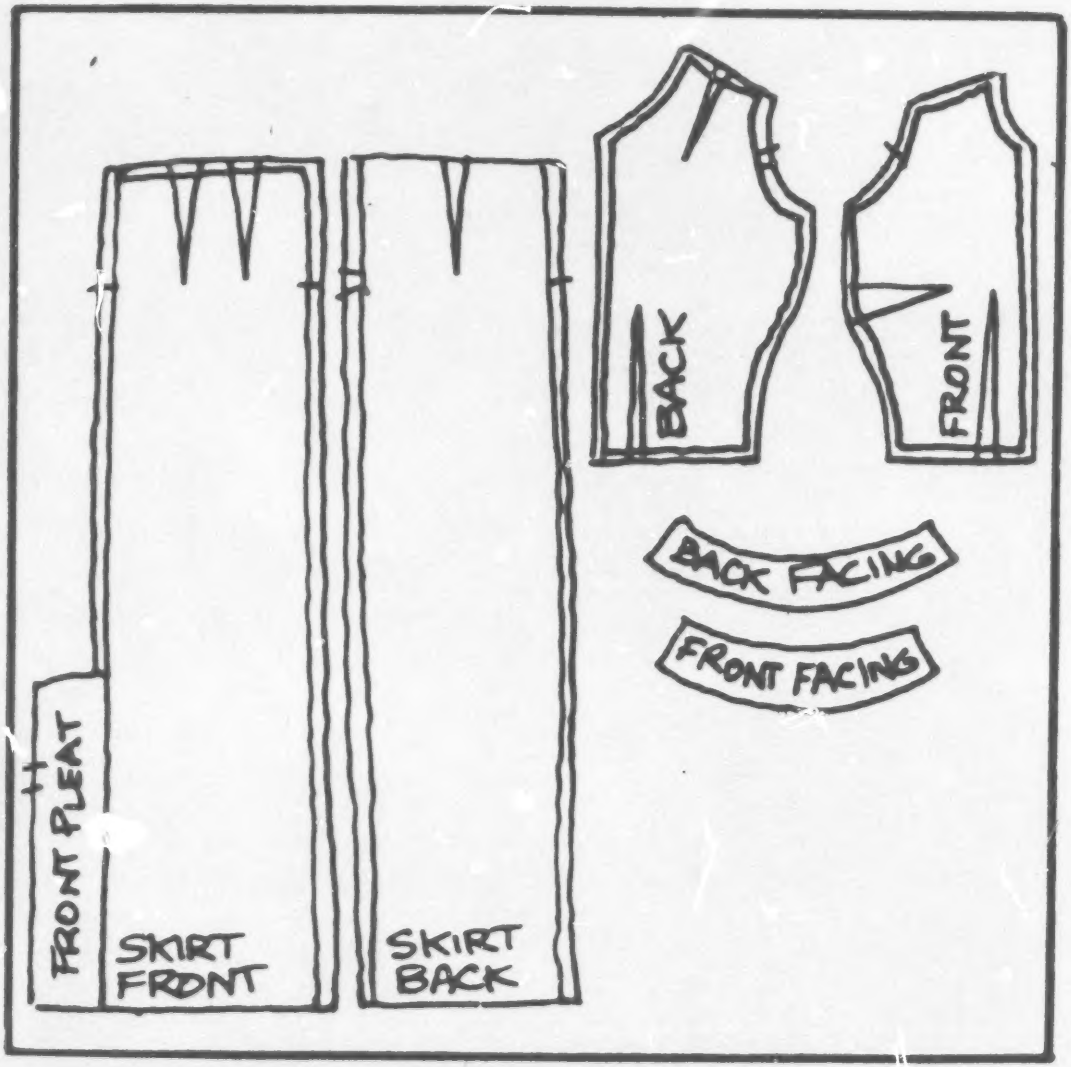
T9.6

SKIRT



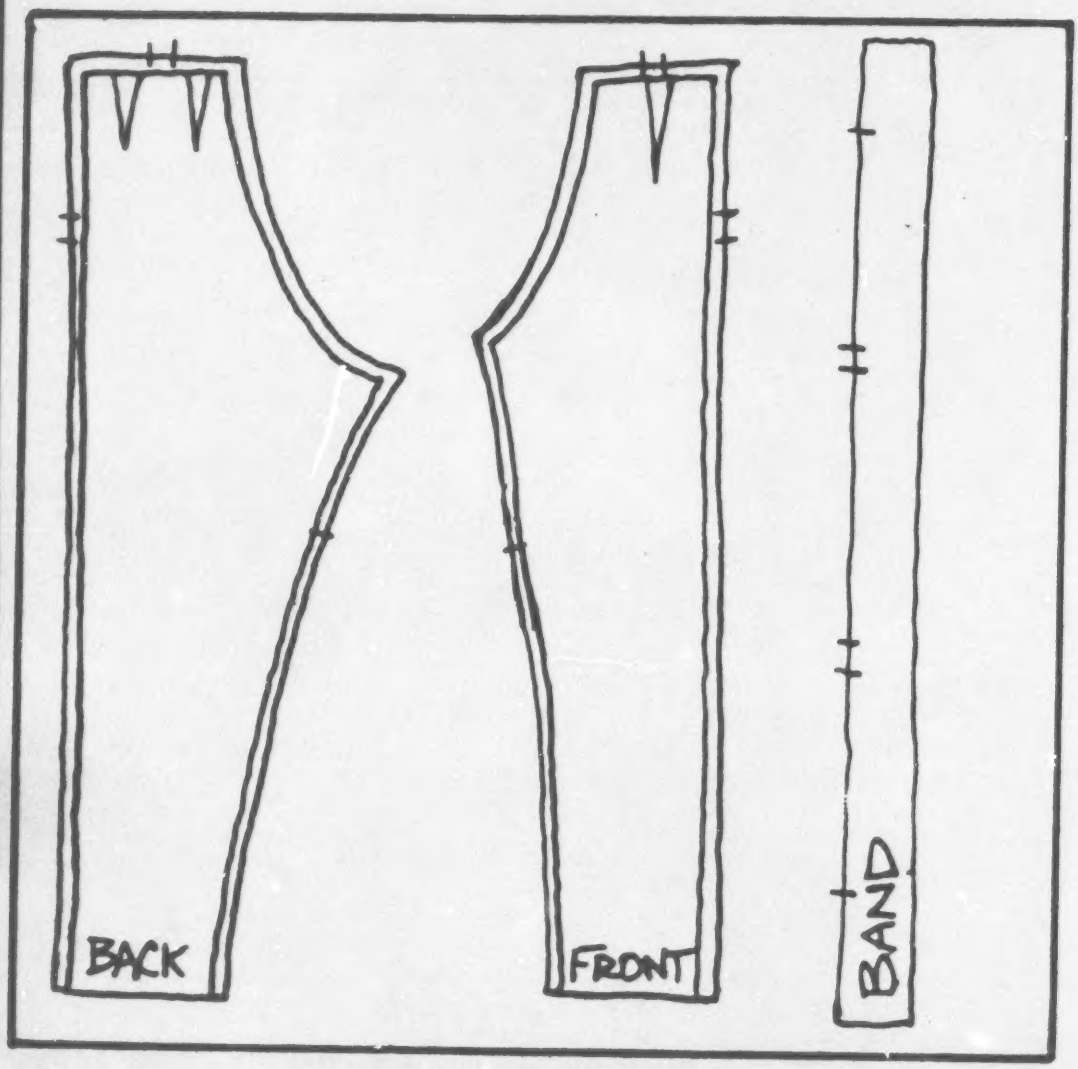
T9.7

TWO PIECE GARMENT



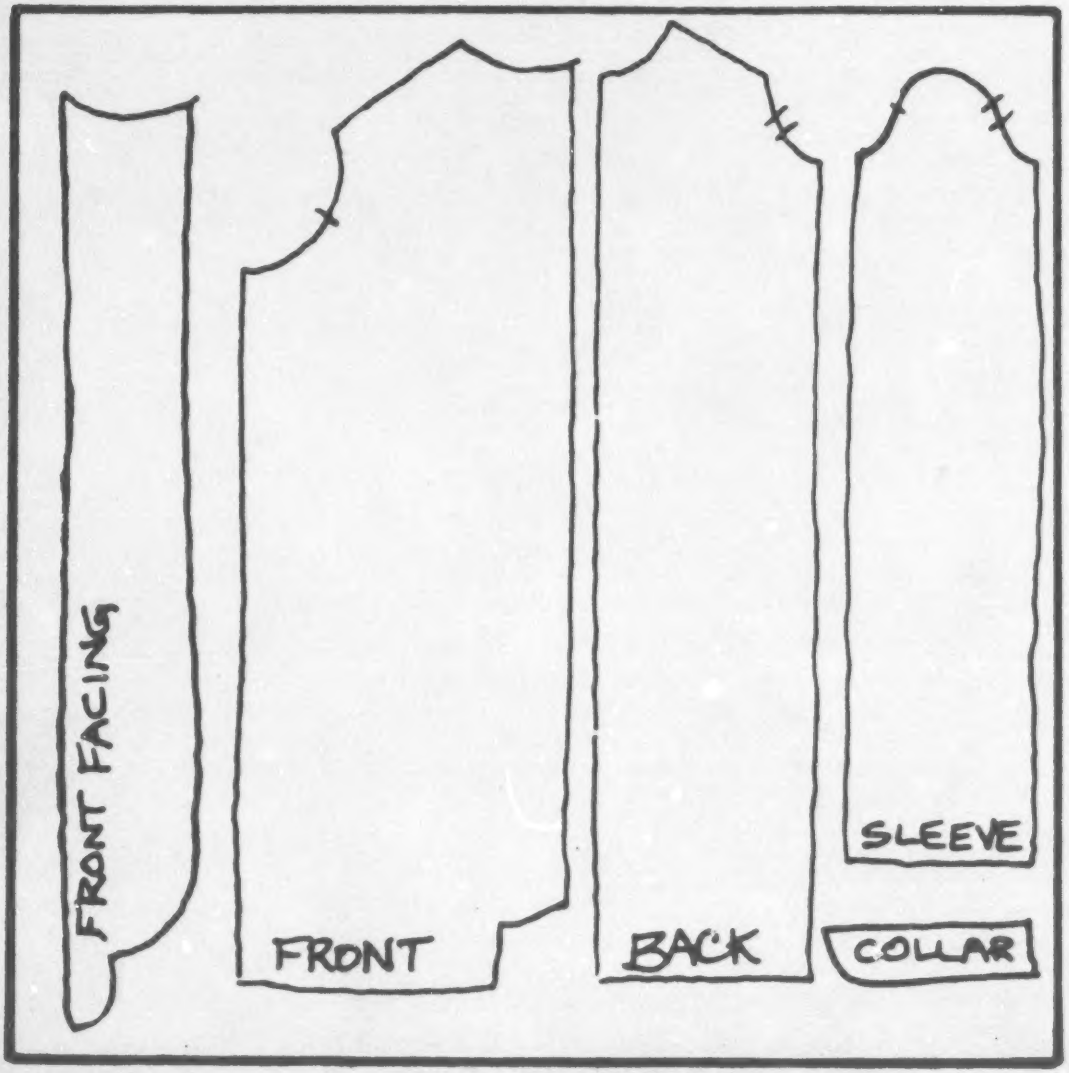
T9.8

SLACKS

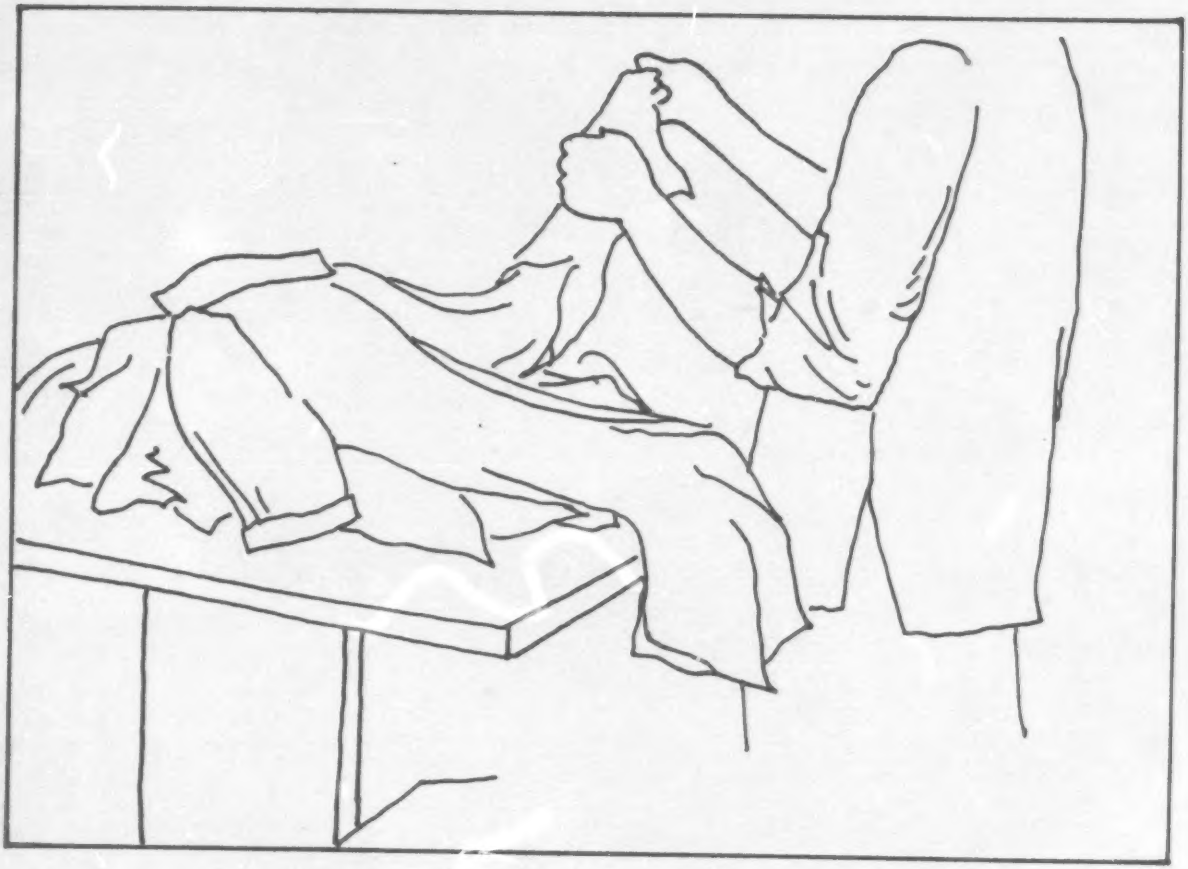


T9.9

BLOUSE

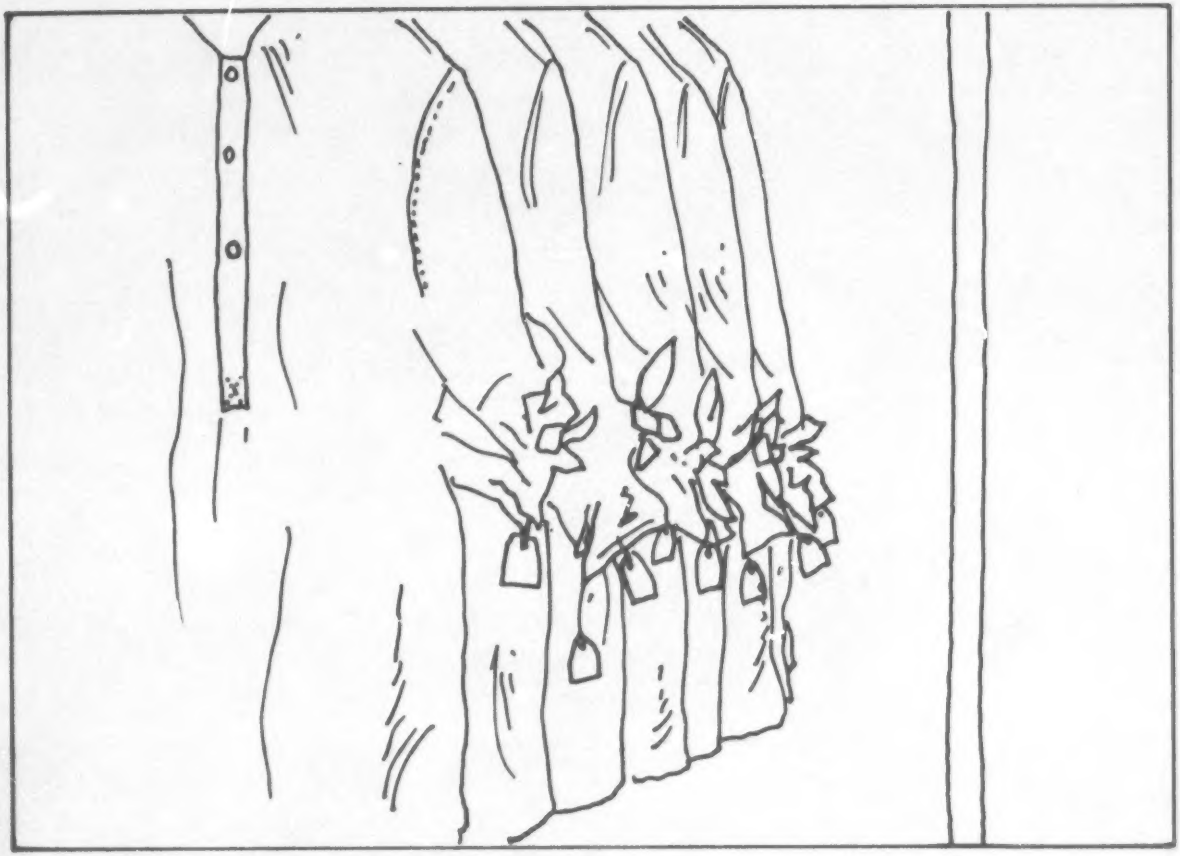


T10.1

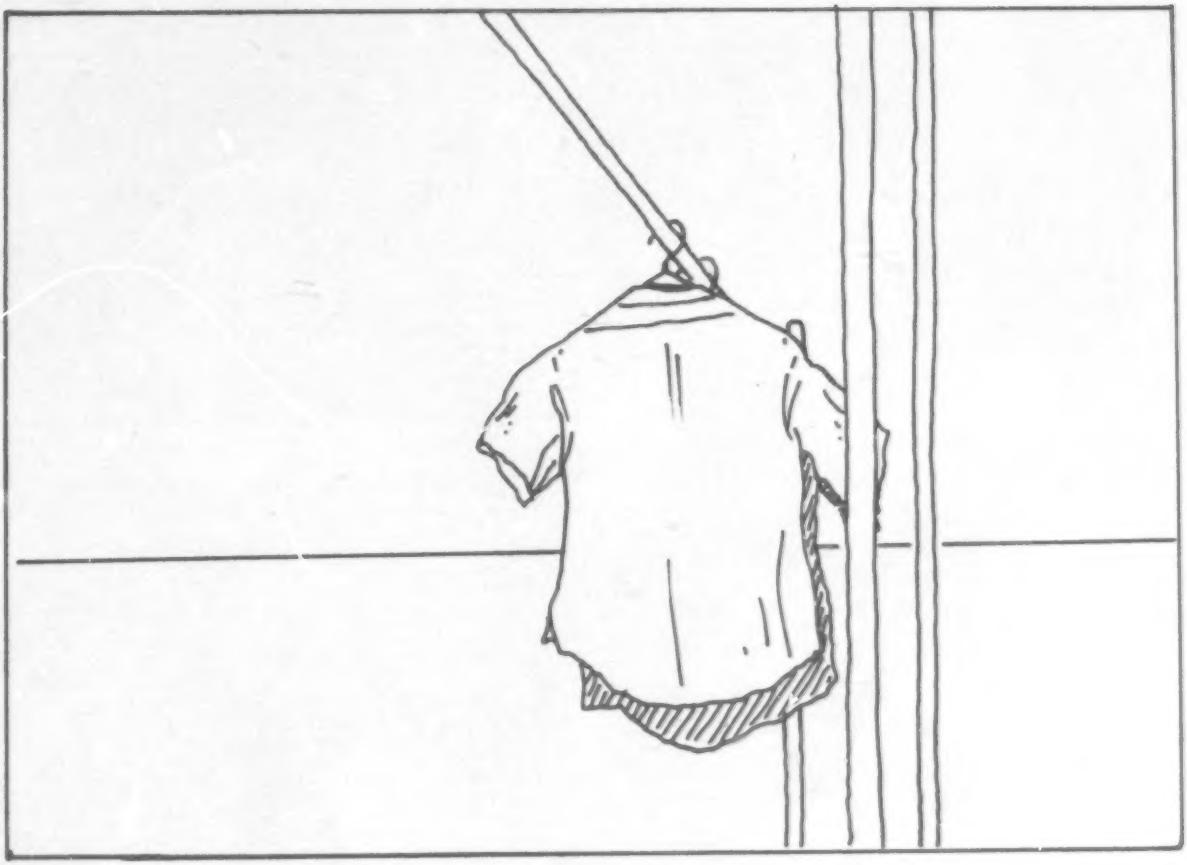


T10.2

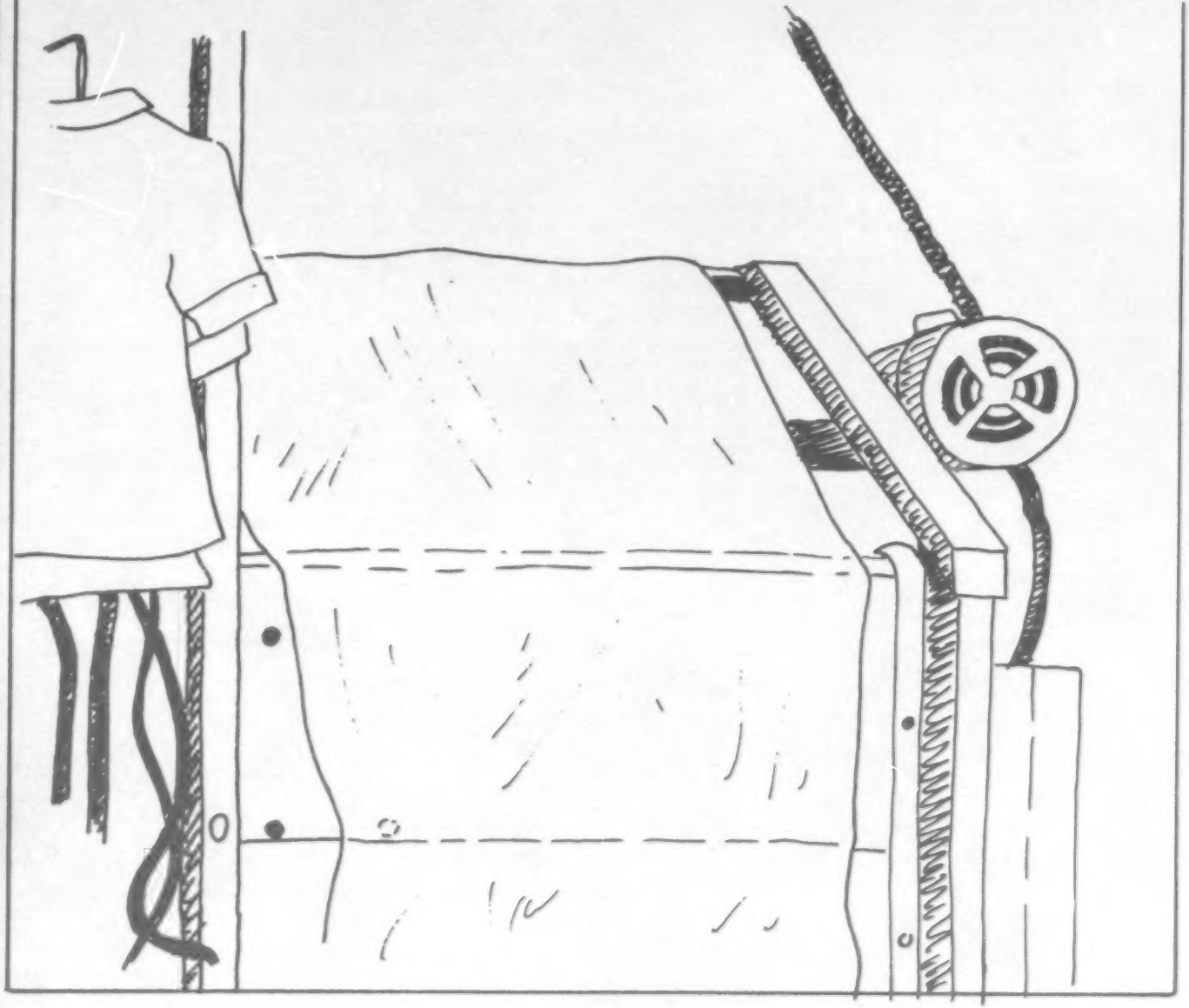
T10.3

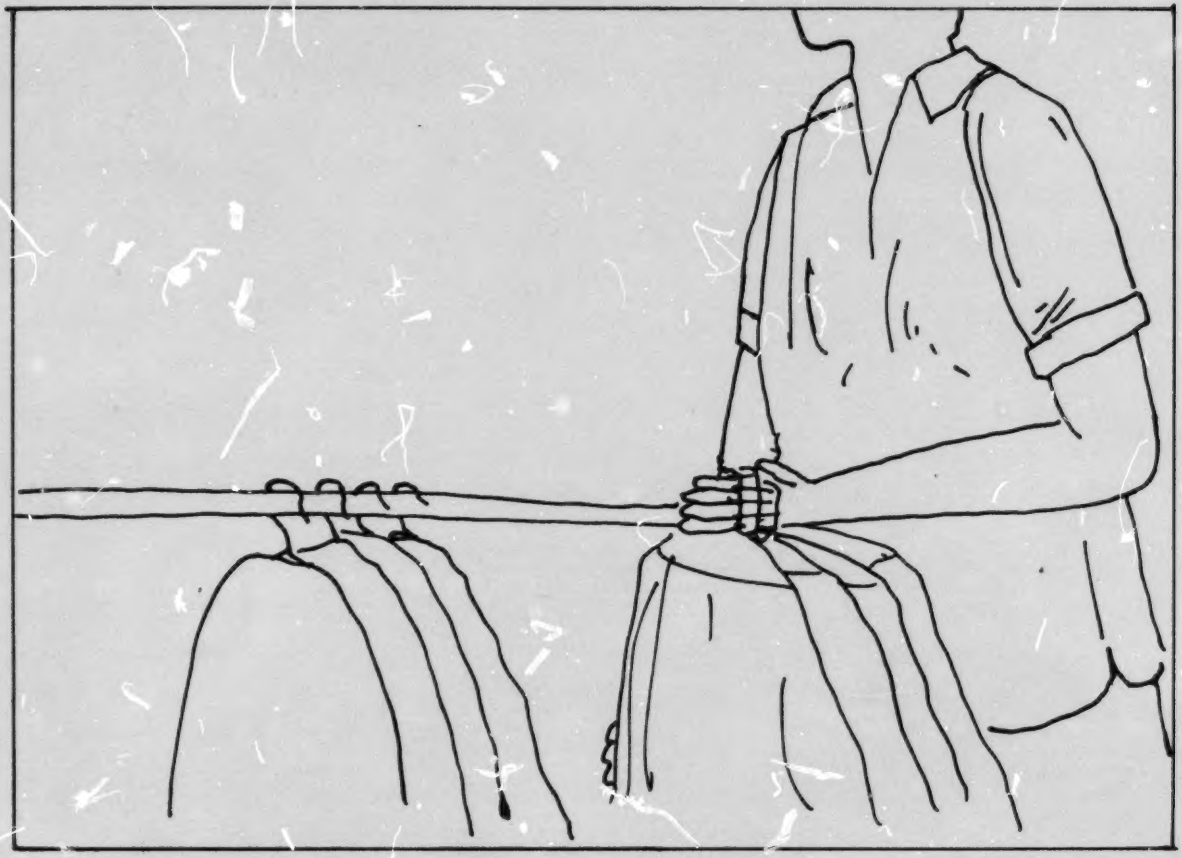


T10.4



T10.5



T10.6

T10.7